

SPECIAL EQUIPMENT MANUAL

37x85x73 SLH PREVACUUM STERILIZER MBM B301850-325

(7-31-01)

P-387349-971

Rev. 0

Prepared Especially For:

UCSH

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PROPRIETARY INFORMATION

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Operating Procedure

AMSCO Scientific Eagle® Century™ Series SLH Prevacuum Sterilizer

(5/25/95)

P-387345-475 Rev. 0

A WORD FROM AMSCO

This manual contains important information on proper use of the Scientific Eagle® Century™ Series Prevacuum Sterilizer. **All personnel involved in the use of this equipment must carefully review and comply with the warnings, cautions and instructions contained in this manual.** These instructions are important to protect the health and safety of personnel operating an Eagle Century Series sterilizer and should be retained in a conveniently accessible area for quick reference.

This sterilizer is specifically designed to process goods using only the cycles as specified in this manual. If there is any doubt about a specific material or product, contact the manufacturer of the product for the recommended sterilization technique.

AMSCO carries a complete line of accessories for use with this sterilizer to simplify, organize and assure sterility of the sterilization process. Instrument trays and biological/chemical monitoring systems are all available to fulfill your facility's processing needs. An AMSCO representative will gladly review these with you.

Service Information

A thorough preventive maintenance program is essential to safe and proper sterilizer operation. Comprehensive instructions for routine preventive maintenance can be found in the *Routine Maintenance Procedure* provided.

You are encouraged to contact AMSCO concerning our Preventive Maintenance Agreement. Under the terms of this agreement, preventive maintenance, adjustments, and replacement of worn parts are done on a scheduled basis to assure equipment performance at peak capability and to help avoid untimely or costly interruptions. AMSCO maintains a nationwide staff of well equipped, factory-trained technicians to provide this service, as well as expert repair services. Please contact your AMSCO representative for details.

Advisory

A summary of the safety precautions to be observed when operating this equipment can be found in Section 1 of this manual. Do not operate the sterilizer until you have become familiar with this information.

This sterilizer is not designed to process flammable liquids nor liquids in containers that are not designed for sterilization. Any alteration of the sterilizer which affects its operation will void the warranty and could violate state and local regulations and jeopardize insurance coverage.

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Appendix A



SCREEN REFERENCE TABLE A-1

SUMMARY OF WARNINGS AND CAUTIONS






1

The following is a summary of the safety precautions which must be observed when operating this equipment. WARNINGS indicate the potential for danger to personnel, and CAUTIONS indicate the potential for damage to equipment. These precautions are repeated (in whole or in part), where applicable, throughout the manual. Carefully read all safety precautions before using the equipment.


WARNING - EXPLOSION HAZARD:

-  This sterilizer is not designed to process flammable liquids.
-  Do not operate this sterilizer in the presence of flammable compounds.



WARNING - BURN HAZARD:

-  When sterilizing liquids, to prevent personal injury or property damage resulting from bursting bottles and hot fluid, you must observe the following procedures:
 - Use LIQUID cycle only; no other cycle is safe for processing liquids.
 - Use only vented closures; do not use screw caps or rubber stoppers with crimped seal.
 - Use only Type I borosilicate glass bottles; do not use ordinary glass bottles or any container not designed for sterilization.
 - Do not allow hot bottles to be jolted; this can cause hot-bottle explosions. Do not move bottles if any boiling or bubbling is present.
-  Do not attempt to open the door if a "Water In Chamber" alarm condition exists. Call a qualified service technician before attempting to use the sterilizer further.
-  Before daily flushing of the generator, generator must be at 0 psig and cooled to room temperature.
-  When loading or unloading the sterilizer, always wear protective gloves and apron (also face shield if processing liquids). Sterilizer and shelves/loading car will be hot after running a cycle.
-  Sterilizer operator may be severely burned by scalding water if the water level control malfunctions. The steam generator level control may malfunction if the supply water exceeds 26,000 ohms/cm (38.5 conductivity min.). Do not connect to treated water (e.g., distilled, reverse osmosis, deionized) unless water resistivity is determined to be acceptable. If water exceeds 26,000 ohms/cm, contact AMSCO Engineering Service for information concerning modifications required to the generator control system.


WARNING - FALL HAZARD:

-  To prevent falls, keep floors dry by immediately wiping up any spilled liquids or condensation in sterilizer loading and unloading areas.




WARNING - STERILITY ASSURANCE HAZARD:

-  Load sterility may be compromised if the biological air removal or air leak test indicates a potential problem. If these indicators show a potential problem, refer the situation to a qualified service technician before using the sterilizer further.
 -  According to AAMI standards, a measured leak rate greater than 1 mm Hg/minute indicates a problem with the sterilizer. Refer the situation to a qualified service technician before using the sterilizer further.
-

WARNING - PERSONAL INJURY HAZARD:

-  When closing the chamber door, keep hands and arms out of the door opening and make sure opening is clear of any obstructions..
-

CAUTION - POSSIBLE EQUIPMENT DAMAGE:

-  Do not attempt to open sterilizer door unless chamber pressure is at 0 psig.
-  Failure to flush generator on a daily basis could result in generator malfunctions.
-  Before flushing generator, make sure generator drain valve is fully open.

The information in this section is intended as a general guide to steam sterilization techniques. For a more detailed description of this subject, refer to the following publications available from AMSCO:

- AMSCO Techniques Manual (MK-2085)
- Wet Pack Problem Solving Guide (MK-3099)

AMSCO also recommends reference to the standards of Association for the Advancement of Medical Instrumentation (AAMI).

General

Prior to sterilization, all materials and articles must be thoroughly cleaned. After sterilization, most goods should be stored for no longer than 30 days, depending on wrapping materials.

For sterilization of articles or materials not covered in this section, contact the manufacturer of the article for recommended procedure. Cycle times and temperatures not covered in this manual should always be validated for efficiency before processing loads.

- * *For in-depth training, AMSCO offers a wide range of education/training programs designed to meet the educational needs of scientific industries. Contact AMSCO for details.*

Recommended Sterilization Variables

» Prevacuum Cycle

Prevacuum cycle is recommended to process any goods, except liquids, which are capable of being sterilized with steam. This cycle can also be used to decontaminate wastes, including wastes containing liquids, provided the materials are properly contained.

Refer to Table 2-1 for the type of items which can be processed in a Gravity cycle and the recommended cycle parameters.

Table 2-1. Prevacuum Cycle Parameters

Temperature	Pressure Pulses psig (psia)	Minimum Recommended Sterilize Time* minutes
121°C (250°F)	12-14 (27-29)	15
132°C (270°F)	26-28 (40-42)	4

- * *Minimum sterilize times are based on obtaining a 10-6 Sterility Assurance Level (SAL) with standard test loads. Your specific loads may require different sterilize times to achieve this level of sterility, or you may require a different SAL.*

» Gravity Cycle

Refer to Table 2-2 for the type of items which can be processed in a Gravity cycle and the recommended cycle parameters.

Table 2-2. Gravity Cycle Parameters

Items	Minimum Recommended Sterilize Time at 121°C (250°F)	Minimum Recommended Sterilize Time at 132°C (270°F)	Dry Time
Glassware, empty, inverted, without closures*	15 minutes	3 minutes	0 minutes**
Instruments, metal combined with suture, tubing or other porous materials (unwrapped)	20 minutes	10 minutes	0 minutes**
Hard Goods, unwrapped	15 minutes	3 minutes	0 minutes**
Hard Goods, wrapped in muslin or equivalent	30 minutes	15 minutes	30 minutes***

* If items which can trap air must be sterilized upright, they should be sterilized in a prevacuum cycle.

** Goods will be wet when removed from sterilizer.

*** Dry time can vary for wrapped goods depending on pack density, weight of goods, pack preparation technique including type of wrapping material used, and sterilizer loading procedures.

» Liquid Cycle

Refer to Table 2-3 for recommended Liquid cycle parameters. The recommended times indicated in Table 2-3 assume the use of vented bottles or Erlenmeyer flasks. The "minimum sterilization time" includes the time required to bring the solution up to the sterilize temperature plus the time required to achieve sterilization.

NOTE: Load probes and F₀ option will allow you to optimize cycle times.

⚠ WARNING - EXPLOSION HAZARD: This sterilizer is not designed to process flammable liquids.

⚠ WARNING - BURN HAZARD:

When sterilizing liquids, you must observe the following procedures:

- Use LIQUID cycle only.
- Use only vented closures.
- Use only Type I borosilicate glass bottles.
- Do not allow hot bottles to be jolted.

Table 2-3. Liquid Cycle Parameters - No Load Probes

Volume of Liquid in One Container	Minimum Recommended Sterilize Time* at 121°C (250°F) minutes
75 mL	25
250 mL	30
500 mL	40
1000 mL	45
1500 mL	50
2000 mL	55
> 2000 mL	55 + 10 min/L

* Minimum sterilize times are based on obtaining a 10⁻⁶ Sterility Assurance Level (SAL) with standard test loads. Your specific loads may require different sterilize times to achieve this level of sterility, or you may require a different SAL.

Recommendations for Sterilizing Liquids

⚠ WARNING - EXPLOSION HAZARD: This sterilizer is not designed to process flammable liquids

⚠ WARNING - BURN HAZARD: When sterilizing liquids, you must observe the following procedures:

- Use LIQUID cycle only.
- Use only vented closures.
- Use only Type I borosilicate glass bottles.
- Do not allow hot bottles to be jolted.

IMPORTANT: Please read the following paragraphs before sterilizing any liquids in your sterilizer.

The Eagle Century Series sterilizer is designed to process liquids only when borosilicate containers with vented closures are used.

Borosilicate glass is required because it is a superior glass capable of resisting thermal shock. If glass not as thermally resistant is used, a greater potential for bursting exists.

Vented closures are required because, by design, they release internal pressure buildup by automatically venting the containers, whereas pressure in unvented containers remains until the contents have cooled. Examples of vented closures are shown in Figure 2-1.

Sterilizing liquids in any other type of container or with the use of non-vented closures requires a sterilizer specifically designed for that purpose.

When loading, place small bottles in a separate basket to minimize sliding. Always use side rails on the loading car to prevent containers or baskets from falling off.

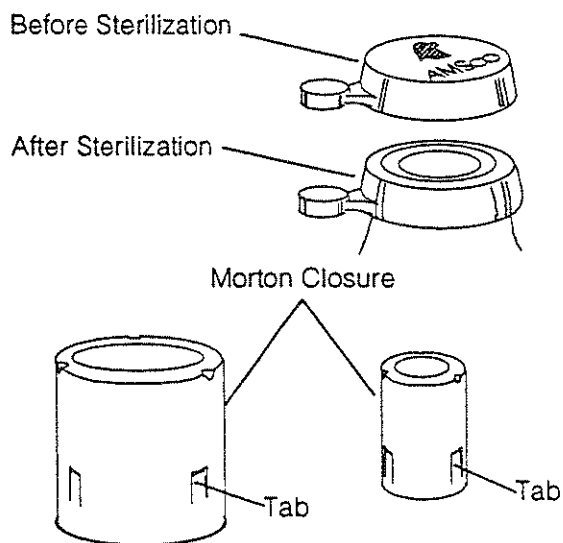


Figure 2-1. Vented Closures

Recommendations for Enhancing the Sterilization Process

Saturated steam is a well controlled, reliable method for processing items which can withstand the temperatures and pressures associated with steam sterilization. The requirements for achieving reproducible results are well known by many users, but are not always understood by all users.

The condition most likely to result in sterilization problems is a failure to remove all of the air from the items being processed. For example, placing an empty beaker or bowl in an upright position in a gravity displacement sterilizer may result in the object not being sterilized, or may require exceptionally long sterilization times. This problem is due to the fact air has almost twice the density as does saturated steam under the same conditions. Thus, the air sits in the bottom of the container, and the steam forms a stable layer over the air. This effect is similar to oil forming a stable layer over water. As long as there is no mechanism for actively mixing the two, the bottom of the container will only see dry heat, which is not an effective sterilization method at the temperatures typically used in steam processes.

There are two methods for enhancing the sterilization of solid bottom containers in gravity displacement cycles. These are:

- Place 1 to 2 mL of water in the bottom of each container. The expansion of the water into steam as the product is heated will force most of the air out of the object, thus allowing steam to reach all surfaces and effect sterilization.
- The better, more reliable method is to orient all objects in a manner which would allow water to flow out. When the steam enters the chamber, it will tend to layer over the air. However, the object is now oriented so the air can flow out. As the air flows out of the container, it will be replaced by the steam. The steam can now reach all surfaces and effect sterilization.

The best type of cycle for assuring sterilization of containers, and of objects which contain lumens or tortuous paths, is the prevacuum cycle. In this process, several vacuum pulses remove all of the air from the load. The steam can then immediately contact all surfaces. This immediate contact results in dramatically shorter sterilization times than are required when complete air removal cannot be assured. Items which take 15 to 30 minutes to sterilize in a gravity displacement cycle can be sterilized in 4 minutes or less at 132°C (270°F).

Objects which do not allow easy passage of steam or air cannot be effectively sterilized with any steam process. For example, pipette cans with lids in place do not allow all the air to flow out, or the steam to flow in, even with prevacuum cycles. In a gravity cycle, these items have a high probability of being non-sterile. In a prevacuum cycle, these items may be crushed by the steam pressure because the chamber pressure changes much faster than does the pressure inside the canister.

Items which are hermetically sealed (e.g., empty screw cap bottles) cannot be sterilized by any steam process because the steam cannot get into the device, and air cannot get out. If you must process these items, make certain the screw caps are loosened at least one half turn (more would be better). Verify your process is capable of sterilizing these objects by running biological indicators in the bottom of the bottle. If the biological indicators are not killed, the caps need to be loosened even further, or the bottles need to be sterilized separately from the caps (cover the bottles with Kraft paper, peel pouches or some other steam permeable material).

Control Measures for Verifying Sterilization Process

» Biological Monitors

Steam sterilizers should be tested weekly, preferably daily, to verify the sterilization process and minimize the possibility of a load recall.

The best way to verify the sterilization process or to assure sterility of an article is to use a biological monitor.

A live spore test utilizing *B. stearothermophilus* is the most reliable form of biological monitoring. AMSCO recommends that Proof Dual-Pack[®] or products such as AMSCO's Proof Plus[®] and Spordex[®] be used daily to test the sterilizer (see Figure 2-2). These products utilize controlled populations of a controlled resistance so that survival time and kill time can be demonstrated.

To verify sterilization process, insert the Proof Plus or Spordex in a test pack and place pack at the bottom front of the rack. Run test pack through a typical cycle. On completion of cycle, forward the test pack and monitor to appropriate personnel for examination.

** Proof Dual-Pack, Proof Plus and Spordex are available from your local AMSCO representative. Refer to Table 2-4 for ordering information.*

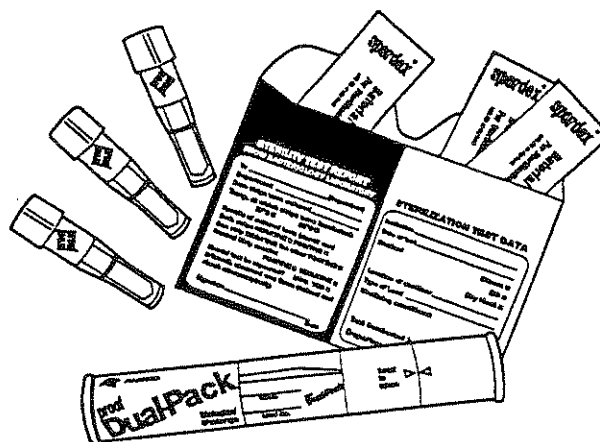


Figure 2-2. Biological Monitors

There are several ways to assure the leak rate of the Century sterilizer is within acceptable limits. These tests include a factory-programmed Leak Test cycle which determines the leak rate in mmHg/minute, and factory-programmed cycles for running standard pass/fail indicator loads.

The first prevacuum cycle of each day should be used to test the adequacy of air removal from the chamber and a sample challenge load during the prevacuum phase. Adequate air removal is necessary to assure that when steam is subsequently admitted into the chamber, its penetration of the load may be virtually instantaneous. If air is not sufficiently removed from the chamber and sample load, sterilizer repair or adjustment is needed to assure that sterility can still be achieved.



WARNING-STERILITY ASSURANCE HAZARD: Load sterility may be compromised if the biological air removal or air leak test indicates a potential problem. If these indicators show a potential problem, refer the situation to a qualified service technician before using the sterilizer further.

The Eagle Century Series sterilizer is factory programmed with a Dart Test cycle to be run as the first prevacuum cycle of each day.

NOTE: This is not a test for adequate exposure to heat in terms of time-at-temperature.

AMSCO recommends the sample load consist of either the AMSCO DART® (Daily Air Removal Test)* pack or a Bowie-Dick type test pack specifically constructed for the Dart Test cycle. These test packs are designed to expose the pattern and document the removal of residual air from the sample load.

To test prevacuum efficiency, place the test pack, positioned on its back, on the lower rack near the chamber drain. Run test pack through a Dart Test cycle. Following exposure in the test cycle, the pack is opened and the record sheet examined. Acceptable results are achieved if all of the indicator bars on the daily record sheet show a complete color change. If desired, record and file exposed record sheet with the daily printout.

NOTE: When testing with the AMSCO DART (Daily Air Removal Test) pack, a simple color change from yellow to black of the 6 indicator bars verifies that air was removed from the challenge load area of the DART pack.

* DART is available from your local AMSCO representative. Refer to Table 2-4 for ordering information.

» Constructing a Test Pack

The recommended AAMI Standard test pack consists of 24 towels, approximately 36 x 36" (914 x 914 mm), folded three times to give six layers of fabric. The towel material should be coarse, absorbent, durable cotton. Approximate size of pack is 8-1/2 x 11" (216 x 279 mm).

Construct a test pack by stacking the folded towels and placing a single Chemdi Daily Record Sheet~ between the twelfth and thirteenth towel. Wrap towels in two double thickness, 36 x 36" (914 x 914 mm) muslin wrappers and secure pack with tape.

* Chemdi Daily Record Sheet is available from your local AMSCO representative. Refer to Table 2-4 for ordering information.

Table 2-3. Sterilization Supply Products

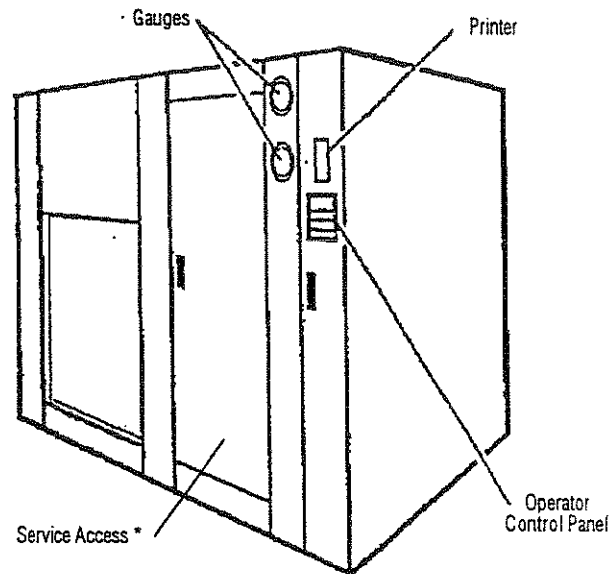
Description	Package Size	Reorder Number
Proof Dual Pack® Biological Indicator	Case of 40	NA125
Proof Plus® Biological Indicator	Box of 100*	NA052
Spor-dex® ST 10®	Box of 100	NA039
DART® Daily Air Removal Test Pack	Box of 50*	NB113
Chemdi® Daily Record Sheets	Box of 50	NB003
Steam Indicator Tape, 3/4" x 60 yds.	Case of 48 Rolls*	NB202
Eaglepac® Self-Seal Pouch, 5-1/4" x 10"	Case of 1000*	NZ510
Autopac® Solution Flask, 1000 ml	Case of 10*	NC608
Disposable Flask Closures	Bag of 100	NC003
Chemspor® 2 Biological Indicator	Box of 100*	NA230
Spor-dex® Suspensions	10 mL Vial	NA091

*Other package and/or product sizes available.

The Eagle Century Series sterilizers are steam-jacketed sterilizers designed to process a variety of loads using saturated steam under pressure and mechanical air removal principles.

Sterilizer is equipped with a fully-programmable microcomputer control system capable of storing process cycles for sterilizing hard goods, lightly wrapped porous loads and liquid loads in vented containers. The control system monitors and automatically controls all cycle operations and functions.

Before operating the sterilizer, it is important to become familiar with the location and function of all major components and controls (see Figure 3-1).



* Service Access door allows convenient access to sterilizer piping and control board housing.

Figure 3-1. Eagle Century Series SLH Sterilizer

Main Power Disconnect Switch

The Main Power Disconnect Switch, located behind the service access door, controls power supply to the sterilizer and control system (see Figure 3-2).

IMPORTANT: This switch should remain in the ON position at all times for normal unit operation.

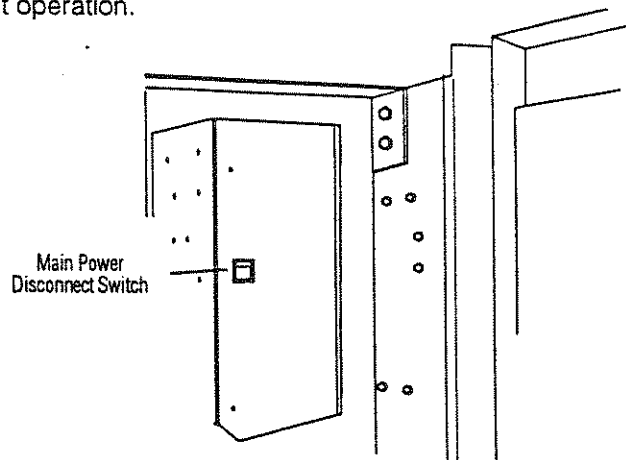


Figure 3-2. Main Power Disconnect Switch

Control Panel

» Touch Screen

The Control Panel, located on load end of the sterilizer, is used to direct all sterilizer functions. The operator may control cycle operation, program cycles and sterilizer operating parameters and monitor cycle performance from the control panel.

The touch screen allows the user to operate and program the sterilizer control by touching (pressing) the appropriate touch-sensitive areas on the display. On each screen, all rectangular-outlined boxes are touch-sensitive areas, referred to as "buttons" (see Figure 3-3).

Refer to Section 4, Control Interface, for further details on interfacing with the control system's touch screen.

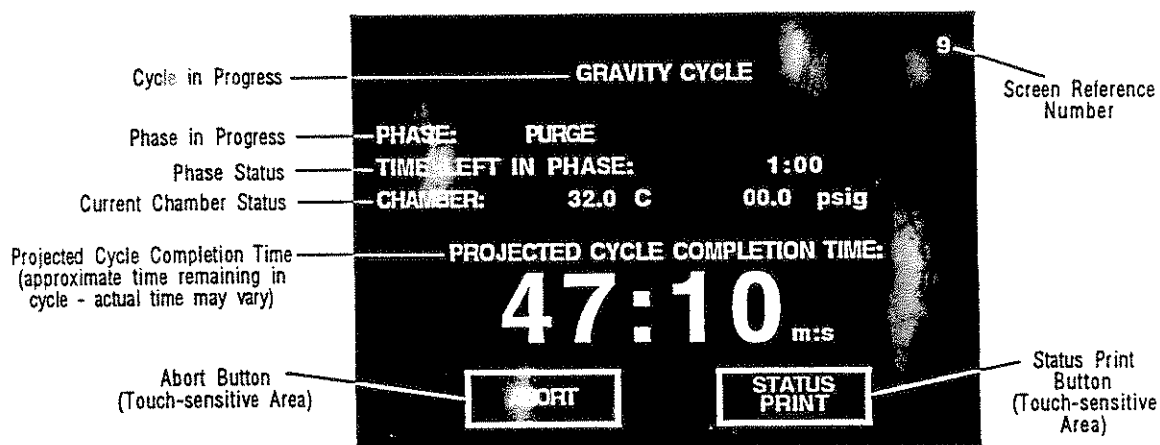


Figure 3-3. Example of In-cycle Touch Screen

» Printer

Ink-on-paper printer records all cycle data on 2-1/4 inch wide paper.

All printer functions are controlled using the touch screen. For details on each of the printer functions, refer to Section 4, Control Interface.

The following is an example of a typical in-cycle printout in the **full print format** (see Figure 3-4).

NOTE: Extended print format is available; refer to "Print Format" in Section 8.

• Operating Mode

When sterilizer is placed in the Operating mode, the generated printout lists the sterilizer type and manufacturer.

• Cycle Start

When a cycle is started, the generated printout lists name of cycle started, time and date the cycle was started, the current cycle count (number of cycles run since original start up of unit), the operator's name, the sterilizer ID number, the default cycle number and type, and the programmed parameters for the cycle started.

NOTE: Cycle count value may be changed in Service mode.

• In-Cycle Performance

During a cycle, the generated printout lists the current time, chamber pressure and chamber temperature at each transition point.

• End-of-Cycle Performance Summary

At the end of a cycle, the generated printout lists number of cycles run that day, the maximum and minimum chamber temperatures reached during the sterilize phase, processing times for key phases and the total cycle time.

• Alarm Condition

When an alarm condition occurs, the generated printout (see Figure 3-5) lists the type of alarm and time, chamber temperature and chamber pressure when it occurred.

NOTE: Refer to *Service and Maintenance*, for listing of possible alarm conditions.

<p>• AMSCO SCIENTIFIC • • EAGLE CENTURY SERIES • • VACAMATIC STERILIZER • • MADE IN U.S.A. •</p>			Operating Mode
===== GRAVITY =====			
CYCLE START AT	7:48:24A		
CN	2/08/94		
CYCLE COUNT	0		
OPERATOR			Cycle Start
STERILIZER	VAC 01		
CYCLE TYPE	GRAVITY		
CYCLE NO.	2		
STERTEMP	= 121.0C		
CONTROLTEMP	= 122.5C		
STER TIME	= 0:30:00		
DRY TIME	= 0:01:00		
	V=inHg		
- TIME	T=C	P=psig	
C 11:48:24A	66.7	0.3V	
C 11:49:24A	112.7	10.0P	
S 11:49:43A	121.2	16.6P	
S 11:51:43A	122.6	17.7P	
S 11:53:43A	123.3	17.8P	
S 11:55:43A	122.6	16.7P	
S 11:57:43A	122.6	17.0P	
S 11:59:43A	122.6	17.2P	
S 12:01:43P	122.5	17.0P	
S 12:03:43P	122.4	17.2P	In-Cycle Performance
S 12:05:43P	122.5	16.8P	
S 12:07:43P	122.4	16.9P	
S 12:09:43P	122.5	17.0P	
S 12:11:43P	122.4	17.1P	
S 12:13:43P	122.4	17.0P	
S 12:15:43P	122.6	16.8P	
S 12:07:43P	122.7	17.0P	
S 12:19:43P	122.6	16.8P	
E 12:19:44P	122.6	16.9P	
E 12:19:54P	113.7	3.2P	
E 12:20:03P	99.9	11.1V	
E 12:21:03P	40.5	28.1V	
E 12:21:46P	68.4	0.5V	
LOAD	020901		
CHAMBER TEMP MAX	=124.8C		
CHAMBER TEMP MIN	=121.2C		
CONDITION	= 1:19		
STERILIZE	=30:01		
EXHAUST	= 1:42		
TOTAL CYCLE	=33:02		
=====			
= READY TO UNLOAD =			End-of-Cycle Performance Summary
=====			

Full Print Format Shown

Figure 3-4. Sample In-cycle Printout

* ALARM
PRESSURE IN CHAMBER
F 10:07:23A 61.7C 34.0P

Full Print Format Shown

Figure 3-5. Sample Alarm Printout

////////////////////////////////////
**Unload End
Control Panel
(Double Door Units)**
////////////////////////////////////

On sterilizers equipped with double doors, an additional control panel is also provided on the sterilizer's unload end. The unload end control panel features a touch screen similar to the one at the load end of the sterilizer. Cycle operation can be started, monitored and aborted using this touch screen. The touch screen display concurrently shows the same screen as the display at the load end of the sterilizer.

NOTE: If sterilizer is equipped with optional dual control capability, cycle value changes and other program adjustments can also be made from the unload end control panel.

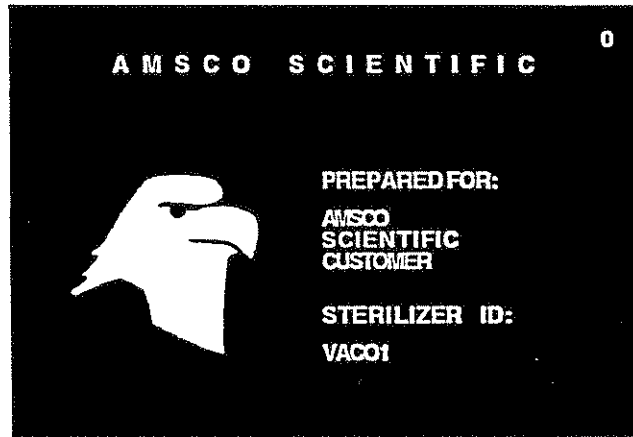
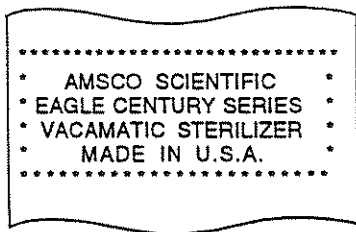
General

Touch screens allow the user to operate and program the sterilizer by lightly touching (pressing) the appropriate touch-sensitive areas on the display. On each screen, all rectangular-outlined boxes are touch sensitive areas, referred to as "buttons". When a button is pressed, the display area within the button lights up and an audible tone sounds.

NOTE: Volume of audible tone may be adjusted or turned off. Refer to Section 8, Programming Operating Parameters, for instructions.

Each screen is identified by a number, located in the top right hand corner of the display screen. Numbers are used for reference only and do not relate to the operating sequence of the screens.

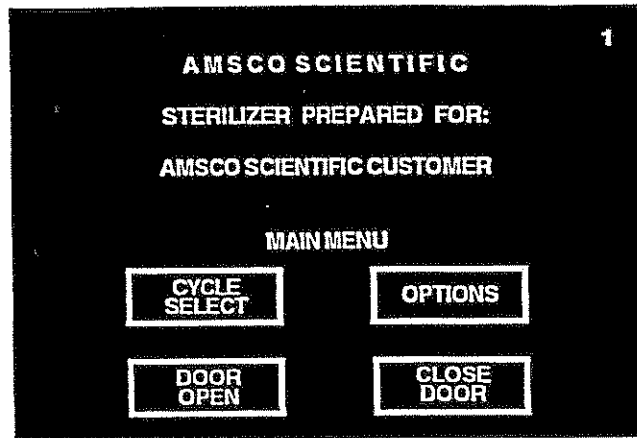
Screen #0 is the standby screen; the screen displayed when main power disconnect switch is first positioned to on and when sterilizer is in Standby mode. The eagle is the touch-sensitive area on this screen. Screen can be customized to include customer name and sterilizer identification number. Refer to Section 9, Out of Cycle Options, for information on changing customer name and sterilizer ID.



Pressing the **EAGLE** puts sterilizer in the Operating mode, advances display to screen #1 and generates a printed record of the sterilizer type (see Figure 4-1).

Figure 4-1. Sample Printout

Screen #1 is the main menu screen. Customer name also appears on this screen.



Pressing **CYCLE SELECT** advances display to the first of two Cycle Select menus (screen #2). Refer to "Cycle Select Menus" included in this section.

Pressing **OPTIONS** advances display to the first of two Out of Cycle Options menus (screen #13). Refer to "Out of Cycle Options Menu" included in this section.

NOTE: Refer to Door Operating Procedure (P-387344-297) for OPEN DOOR and CLOSE DOOR button functions.

If sterilizer is equipped with double doors, screen #1 is replaced by screen #63. Screen #63 includes a SEAL DOOR button in addition to the CYCLE SELECT, OPTIONS, OPEN DOOR and CLOSE DOOR buttons. Pressing **SEAL DOOR** seals the load end or unload end door as programmed. Door can only be sealed from the touch screen located on the same end. Refer to Section 7, Programming Cycle Values, for instructions on programming the interlock feature.

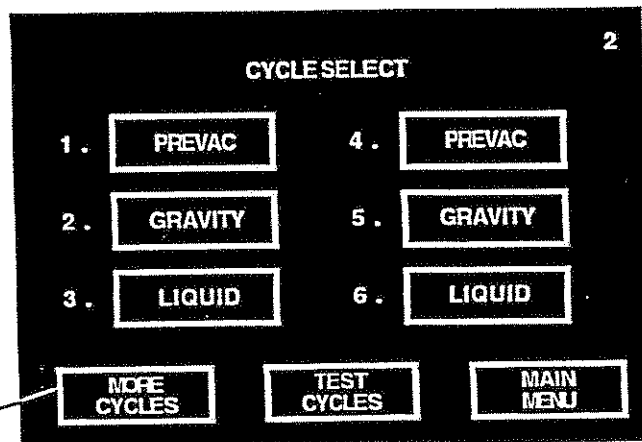
NOTE: If door is currently sealed, the touch screen button will read UNSEAL DOOR. Pressing this button will unseal door as programmed.

Cycle Select Menus

» Processing Cycles

All processing and test cycles must be selected and started using the Cycle Select menu screens (#2 and #3).

After pressing CYCLE SELECT on screen #1, screen #2 appears showing six preprogrammed processing cycles.



Pressing **MORE CYCLES** displays Cycles 7 through 12 on screen #2.

Pressing **TEST CYCLES** advances display to screen #3.

Pressing **MAIN MENU** returns display to screen #1.

Units with Eighteen Cycle Capability Only

Pressing a **cycle button** advances display to a screen listing the corresponding cycle parameters.

For example: If PREVAC button on screen #2 is pressed, the cycle parameters screen #4 appears. Screen lists the cycle parameters programmed for the selected prevac cycle. Similar cycle parameters screens appear after pressing GRAVITY button and LIQUID button.

NOTE: Processing cycle parameters can be changed by the operator/supervisor. Refer to Section 7, Programming Cycle Values.

Pressing **PREVIOUS** returns display to screen #2.

Cycle Name
(Cycle Type)

4

CYCLEPARAMETERS

1. PREVAC (PREVAC)

PURGE TIME 1:00

PULSES 4

MAX: 26.0 psig MIN: 10.0 inHg

STERILIZE:

TEMP 132.0 C

TIME 0:04:00

VACUUM DRY 10.0 inHg

DRY TIME 0:05:00

PREVIOUS **START CYCLE**

Pressing **START CYCLE** initiates the selected cycle and advances display to the first in-cycle status screen (#7). Refer to Section 5, Sterilizer Operation, before running a processing cycle.

» **Test Cycles** After pressing **CYCLE SELECT** on screen #1, screen #2 appears.

Pressing **MAIN MENU** returns display to screen #1.

2

CYCLESELECT

1. PREVAC	4. PREVAC
2. GRAVITY	5. GRAVITY
3. LIQUID	6. LIQUID

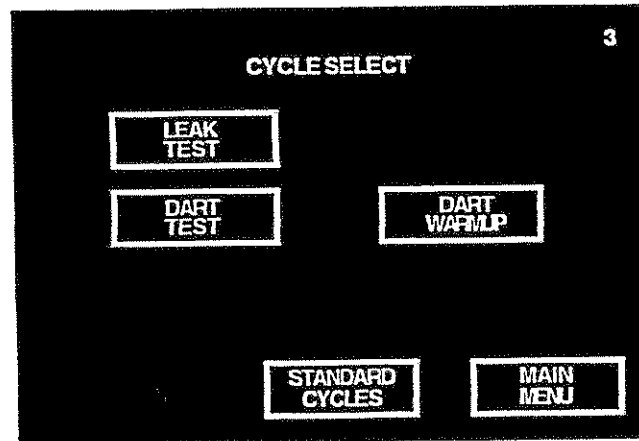
TEST CYCLES **MAIN MENU**

Pressing **TEST CYCLES** advances display to screen #3, the second Cycle Select menu. This screen shows three preprogrammed test cycles.

NOTE: Test cycle parameters are fixed and cannot be changed by the operator/supervisor.

Pressing STANDARD CYCLES returns display to screen #2.

Pressing MAIN MENU returns display to screen #1.



Pressing a **test cycle button** initiates the selected cycle and advances display to the first in-cycle status screen (#7). Refer to Section 5, Sterilizer Operation, before running a test cycle.

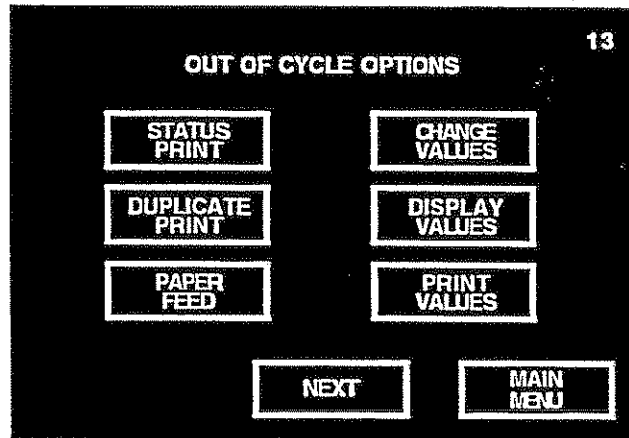
Out of Cycle Options Menus

All other sterilizer functions, including cycle programming and printer operation, are accessed through the Out of Cycle Options menu screens (#13 and #87). Section 9, Out of Cycle Options, describes each function accessible from these menu screens.

After pressing **OPTIONS** on screen #1, screen #13 appears showing six out-of-cycle functions.

*Pressing **NEXT** advances display to screen #87.*

*Pressing **MAIN MENU** returns display to screen #1.*

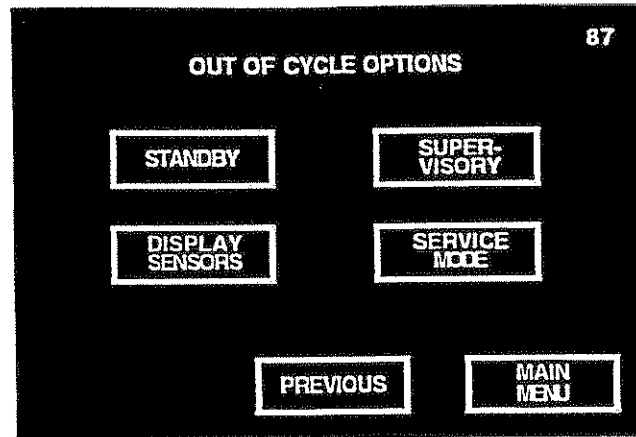


- Pressing **STATUS PRINT** generates a printout listing the time of day and current readings from the pressure and temperature probes. Refer to Section 9 for more information.
- Pressing **DUPLICATE PRINT** generates a printout of cycle data from the last completed cycle. Refer to Section 9 for more information.
- Pressing and holding **PAPER FEED** continually advances the printer paper. Refer to Section 9 for more information.
- Pressing **CHANGE VALUES** provides access to the Change Values menu. User may program the cycle values and sterilizer operating parameters from the Change Values menu. Refer to Section 7, Programming Cycle Values, and Section 8, Programming Operating Parameters, for further information.
- Pressing **DISPLAY VALUES** allows user to view the current programmed cycle values and operating parameters. Refer to Section 9 for more information.
- Pressing **PRINT VALUES** allows user to generate a printout of the current programmed cycle values and operating parameters. Refer to Section 9 for more information.

After pressing NEXT on screen #13, screen #87 appears showing the

Pressing PREVIOUS returns display to screen #13.

Pressing MAIN MENU returns display to screen #1.



remaining out-of-cycle functions.

- Pressing **STANDBY** places sterilizer in the Standby mode and returns display to screen #0. Refer to Section 9 for more information.
- Pressing **DISPLAY SENSORS** allows user to view the current temperature and pressure readings. Refer to Section 9 for more information.
- Pressing **SUPERVISORY** provides access to the Supervisory mode. Refer to Section 9 for more information.
- Pressing **SERVICE MODE** provides access to the Service mode. Refer to Section 9 for more information.

Before Operating Sterilizer

⚠ WARNING - FALL HAZARD:
To prevent falls, keep floors dry by immediately wiping up any spilled liquids or condensation in sterilizer loading and unloading areas.

⚠ CAUTION - Proper cleaning of stainless steel is essential. The use of -

Steel wool, wire brushes, metal scrapers, or

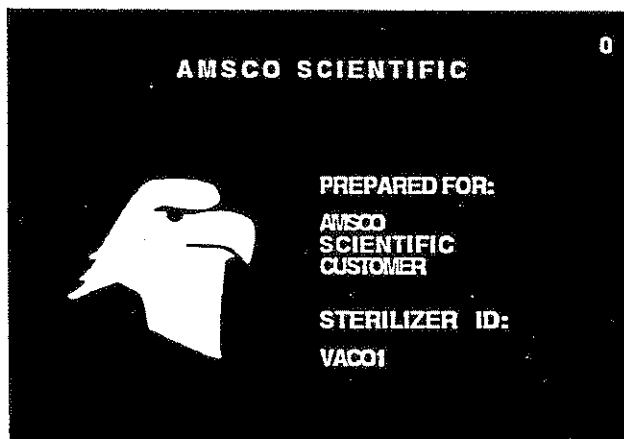
Cleaners or detergents containing bromides, iodides or chlorides (clorox, hydrochloric or muratic acid, etc.) can cause permanent severe damage to any stainless steel chamber. Use of these methods or products will void the pressure vessel warranty.

Immediately wipe up saline solution spills inside the chamber or on the loading car to prevent damage to stainless steel.

The following steps must be performed prior to daily sterilizer usage.

1. Open chamber door and check that drain strainer(s) is clean and in place.
2. Check that chamber interior is clean and close chamber door. Refer to *Service and Maintenance Procedure*, if cleaning is necessary.
3. Open service access door on load end of the sterilizer. Verify that steam and water supply valves to the sterilizer are ON. Close service access door.
4. Check that sufficient amount of printer paper is in the printer. A colored warning stripe is visible when paper roll is near the end. Refer to *Service and Maintenance Procedure*, if the paper roll needs replaced.
5. Press the **EAGLE** on screen #0. Steam enters the sterilizer jacket and heats jacket to 115°C (239°F). Printer records sterilizer type.

NOTE: If access code feature is activated, an assigned four-digit code must be correctly entered before operator can use the sterilizer. Refer to Section 6, Entering Access Code.



6. Run a Leak Test cycle. Leak Test must be run at least once each week. Refer to "Leak Test Cycle Operation", later in this section, for instructions on running this cycle.
7. Run a DART Warmup and a DART Test cycle. DART Test must be run at least once a day. Refer to "DART Warmup Cycle Operation" and "DART Test Cycle Operation", later in this section, for instructions on running these cycles.
8. After running the necessary test cycles, load sterilizer chamber as outlined in "Load Sterilizer", next in this section.

Load Sterilizer

» Sterilizer Equipped with Rack and Shelves

WARNING - BURN HAZARD: When loading or unloading the sterilizer, always wear protective gloves and apron (also face shield if processing liquids). Sterilizer and shelves/loading car will be hot after running a cycle.

WARNING - PERSONAL INJURY HAZARD: When closing the chamber door, keep hands and arms out of the door opening and make sure opening is clear of any obstructions.

1. Open chamber door.
2. Slide shelf half way out of the sterilizer chamber (see Figure 5-1).
3. Place load on shelf and slide shelf back into the chamber. Make sure shelves are completely inside the chamber before closing door.
4. Close chamber door. The sterilizer is now ready to run a processing cycle. Refer to appropriate "Cycle Operation", included in this section, for instructions on running the cycle.

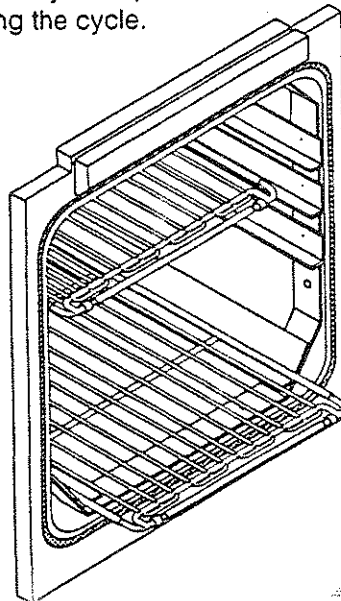


Figure 5-1. Slide Shelf Half Way out of Chamber

» Sterilizer Equipped with Loading Car

WARNING - BURN HAZARD: When loading or unloading the sterilizer, always wear protective gloves and apron (also face shield if processing liquids). Sterilizer and shelves/loading car will be hot after running a cycle.

1. Open chamber door.
2. Verify that loading car is securely fastened to the transfer carriage.
3. Move transfer carriage forward until the carriage latches with the chamber end frame (see Figure 5-2).

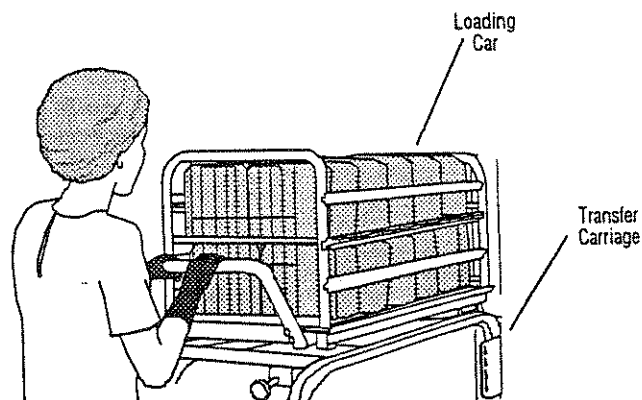


Figure 5-2. Move Loaded Transfer Carriage in Position

4. Verify that transfer carriage is latched to chamber end frame by pulling the carriage backwards. If properly latched, the carriage should remain stationary.

WARNING - PERSONAL INJURY HAZARD: When closing the chamber door, keep hands and arms out of the door opening and make sure opening is clear of any obstructions.

Prevacuum Cycle Operation

WARNING - EXPLOSION HAZARD: Do not operate this sterilizer in the presence of flammable compounds.

Pressing **OPTIONS** advances display to the first Out of Cycle Options menu (screen #13).

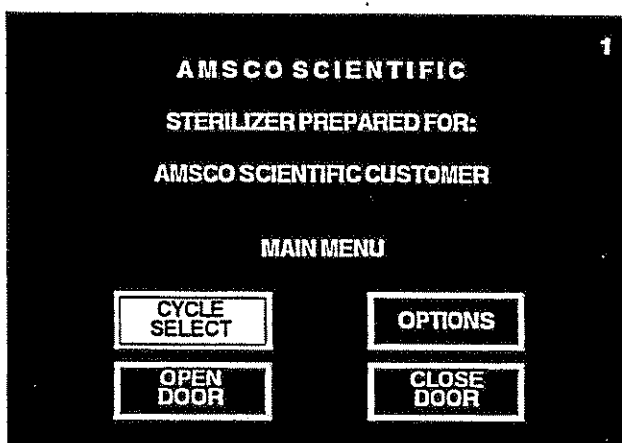
Pressing **TEST CYCLES** advances display to screen #3.

Pressing **MAIN MENU** returns display to screen #1.

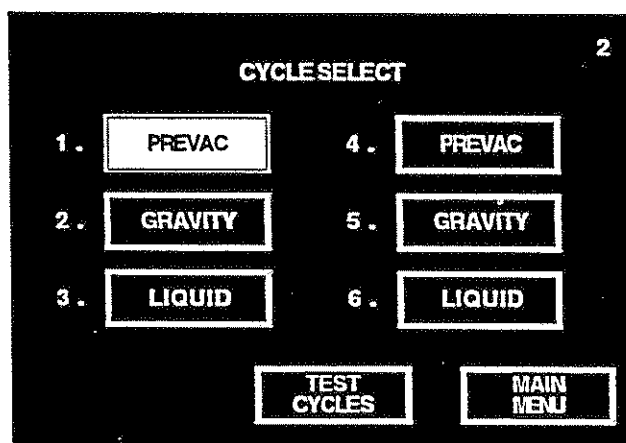
- Once carriage is latched in place, release the loading car from the transfer carriage by lifting up the carriage lock.
- Carefully push loading car into sterilizer chamber. Make sure loading car is locked in place inside the chamber.
- Pull the carriage latch knob to disengage the transfer carriage from the chamber end frame. Move the transfer carriage away from the sterilizer.
- Close the chamber door. The sterilizer is now ready to run a processing cycle. Refer to the appropriate "Cycle Operation", included in this section, for instructions on running the cycle.

The Prevacuum cycle is designed for sterilizing heat- and moisture-stabile materials at 100° to 141°C (212° to 285°F).

- Before running this cycle, refer to "Before Operating Sterilizer" and "Load Sterilizer" at beginning of this section.
- Press **CYCLE SELECT** on screen #1.



- Press **PREVAC** button.



- Verify cycle parameters listed for the selected Prevacuum cycle are acceptable.

If listed cycle parameters are not acceptable, press **PREVIOUS** button and refer to Section 7, Programming Cycle Values, for instructions on changing cycle parameters.

Pressing **PREVIOUS** returns display to screen #2.

Cycle Name
(Cycle Type)

4

CYCLE PARAMETERS

1. PREVAC (PREVAC)

PURGE TIME _____ 1:00
 PULSES _____ 4
 MAX: 26.0 psig MIN: 10.0 inHg

STERILIZE:
 TEMP _____ 132.0 C
 TIME _____ 0:04:00
 VACUUM DRY _____ 10.0 inHg
 DRY TIME _____ 0:05:00

PREVIOUS

START
CYCLE

5. To begin Prevacuum cycle operation, press **START CYCLE**.

NOTE: If START CYCLE is pressed while the chamber door is open, a display screen will appear directing the operator to close door before continuing cycle operation (Door must be closed from screen #1). Operator must reselect the cycle after door is closed.

NOTE: If a cycle is started when the sterilizer has not been fully calibrated, a display screen will appear indicating that the control is not calibrated. Sterilizer must be calibrated by a qualified service technician before processing loads.

6. Sterilizer automatically progresses through the following cycle phases.

NOTE: If an alarm occurs during cycle operation, refer to Service and Maintenance Procedure for instructions on correcting the alarm condition.

NOTE: If power is lost during cycle operation, cycle either continues in same phase or aborts if seal pressure is below 10 psig once power is restored.

- **Jacket Charge** - Jacket charges with steam to 1° less than the programmed sterilize temperature.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

PREVACCYCLE

PHASE: JACKET CHARGE

JACKET CHARGING TO: 120 C

CHAMBER: 32.0 C 00.0 psig

PROJECTED CYCLE COMPLETION TIME:

33:10

m:s

ABORT

STATUS
PRINT

- **Activate Seal** - Door seal fills with steam and expands against the sterilizer door opening, forming an air tight seal.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

PREVACCYCLE

PHASE: ACTIVATE SEAL

DOOR IS WAITING TO BE SEALED

CHAMBER: 32.0 C 00.0 psig

PROJECTED CYCLE COMPLETION TIME:

32:50 m:s

ABORT

STATUS PRINT

- **Purge** - Steam flows through the chamber for the programmed time interval.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

PREVACCYCLE

PHASE: PURGE

TIME LEFT IN PHASE: 1:00

CHAMBER: 32.0 C 00.0 psig

PROJECTED CYCLE COMPLETION TIME:

32:30 m:s

ABORT

STATUS PRINT

NOTE: The projected cycle completion time shown on the display is estimated. The control automatically evaluates the cycle progress and corrects the estimated time at the beginning of each phase.

NOTE: Current time, chamber pressure and chamber temperature are printed at each transition point.

- **Vacuum Pulse Exhaust** - Chamber is exhausted to 4 psig.

NOTE: The sterilizer can be programmed to pull up to 99 pulses during the Prevacuum cycle. Refer to Section 7, Programming Cycle Values.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

PREVAC CYCLE

PHASE: VACUUM PULSE #1

EXHAUSTING TO: 4.0 psig

CHAMBER: 75.0 C 10.0 psig

PROJECTED CYCLE COMPLETION TIME:

31:00 m:s

ABORT

STATUS PRINT

- **Vacuum Pulse Evacuate** - A vacuum is drawn in the chamber to the programmed minimum pressure parameter.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

PREVACCYCLE

PHASE: VACUUM PULSE #1
 EXHAUSTING TO: 10.0 inHg
 CHAMBER: 75.0 C 8.0 inHg

PROJECTED CYCLE COMPLETION TIME:

29:40 m:s

ABORT

STATUS PRINT

- **Charge Pulse** - Chamber charges with steam to the programmed maximum pressure parameter.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

PREVACCYCLE

PHASE: CHARGE PULSE #1
 STEAM CHARGING TO: 26.0 psig
 CHAMBER: 65.0 C 10.0 inHg

PROJECTED CYCLE COMPLETION TIME:

29:00 m:s

ABORT

STATUS PRINT

- **Charge** - After the last prevacuum pulse, chamber charges with steam to the programmed sterilize temperature.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

PREVAC CYCLE

PHASE: CHARGE
 CHARGING TO: 132.0 C
 CHAMBER: 55.0 C 15.0 inHg

PROJECTED CYCLE COMPLETION TIME:

12:10 m:s

ABORT

STATUS PRINT

- **Sterilize** - Sterilize phase begins when chamber temperature is equal to or greater than the programmed sterilize temperature. Chamber temperature is printed every two minutes (or printed after each programmed print interval). The steam-to-jacket valve is regulated to maintain the chamber at the sterilize control temperature (control temperature = sterilize temperature + overdrive temperature).

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

PREVACCYCLE

PHASE: **STERILIZE**

TIME LEFT IN PHASE: **4:00**

CHAMBER: **132.0 C** **29.0 psig**

PROJECTED CYCLE COMPLETION TIME:

11:30 m:s

ABORT

STATUS PRINT

- **Fast Exhaust** - Chamber is exhausted until chamber pressure reaches 4 psig.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

PREVACCYCLE

PHASE: **FASTEXHAUST**

FAST EXHAUSTING TO: **4.0 psig**

CHAMBER: **133.5 C** **30.0 psig**

PROJECTED CYCLE COMPLETION TIME:

7:20 m:s

ABORT

STATUS PRINT

- **Vacuum Dry** - A vacuum is drawn in the chamber to the programmed vacuum dry point.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

PREVACCYCLE

PHASE: **VACUUM DRY**

EVACUATING TO: **10.0 inHg**

CHAMBER: **83.5 C** **2.0 psig**

PROJECTED CYCLE COMPLETION TIME:

6:10 m:s

ABORT

STATUS PRINT

NOTE: If dry time is programmed for 0 minutes, cycle will automatically skip the Vacuum Dry, Dry and Air Break phases, retract door seal and remove vapors for 1 minute before completing cycle.

- **Dry** - Dry phase begins once vacuum level in chamber reaches the programmed vacuum dry point. Chamber then continues to evacuate for the programmed time interval.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

PREVACCYCLE

PHASE: DRY

TIME LEFT IN PHASE: 5:00

CHAMBER: 83.5 C 10.0 inHg

PROJECTED CYCLE COMPLETION TIME:

5:30 m:s

ABORT

STATUS PRINT

- **Air Break** - Filtered air enters the chamber to relieve the vacuum within the chamber.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

PREVACCYCLE

PHASE: AIR BREAK

AIR BREAK TO: 2.0 inHg

CHAMBER: 83.5 C 25.0 inHg

PROJECTED CYCLE COMPLETION TIME:

0:30 m:s

ABORT

STATUS PRINT

- **Retract Seal** - Steam is exhausted from the door seal.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

PREVACCYCLE

PHASE: RETRACTSEAL

DOOR WAITING TO BE UNSEALED

CHAMBER: 32.0 C 00.0 psig

PROJECTED CYCLE COMPLETION TIME:

0:20 m:s

ABORT

STATUS PRINT

NOTE: If sterilizer is equipped with double doors and interlock type 1 or 3 is programmed for this cycle, operator must select which door to unseal by pressing **UNSEAL DOOR** on the appropriate touch screen. Refer to Section 7 for description of interlock types.

- **Complete** - The complete tone sounds and the cycle summary and end-of-cycle messages are printed.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

7

PREVACCYCLE

PHASE: COMPLETE

OPEN DOOR(S) TO UNLOAD

CHAMBER: 32.0 C 00.0 psig

ABORT

STATUS PRINT

⚠ WARNING - BURN HAZARD:
When loading or unloading the sterilizer, always wear protective gloves and apron (also face shield if processing liquids). Sterilizer and shelves/loading car will be hot after running a cycle.

⚠ WARNING - FALL HAZARD:
To prevent falls, keep floors dry by immediately wiping up any spilled liquids or condensation in sterilizer loading and unloading areas.

7. Once cycle is complete, open chamber door and unload sterilizer. Display returns to the main menu (screen #1).

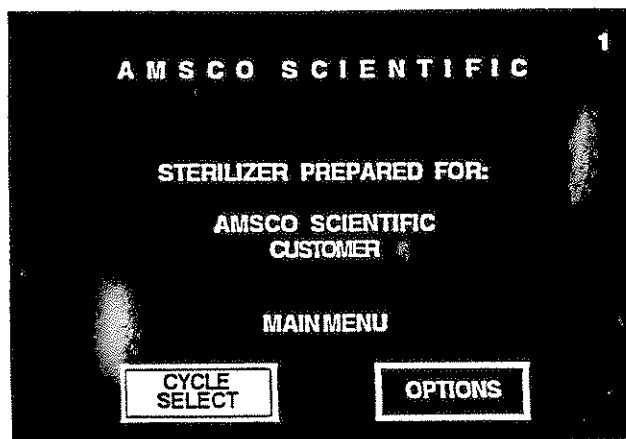
Gravity Cycle Operation

**WARNING - EXPLOSION
HAZARD:** Do not operate this
sterilizer in the presence of
flammable compounds.

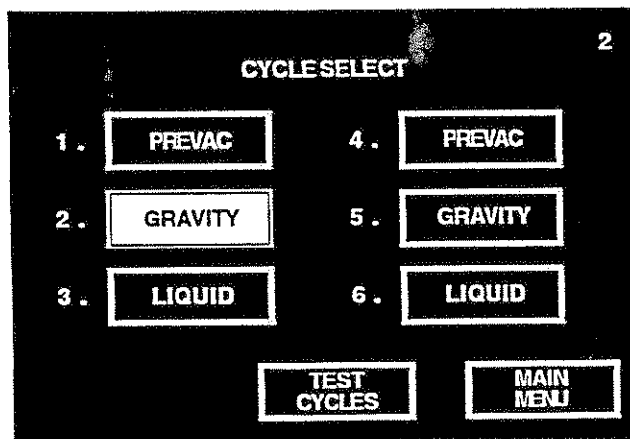
Pressing **OPTIONS** advances display to
the first Out of Cycle Options menu
(screen #13).

The Gravity cycle is designed for sterilizing heat- and moisture-stable goods
at 100° to 141°C (212° to 285°F).

1. Before running this cycle, refer to "Before Operating Sterilizer" and "Load Sterilizer" at beginning of this section.
2. Press **CYCLE SELECT** on screen #1.



3. Press **GRAVITY** button.

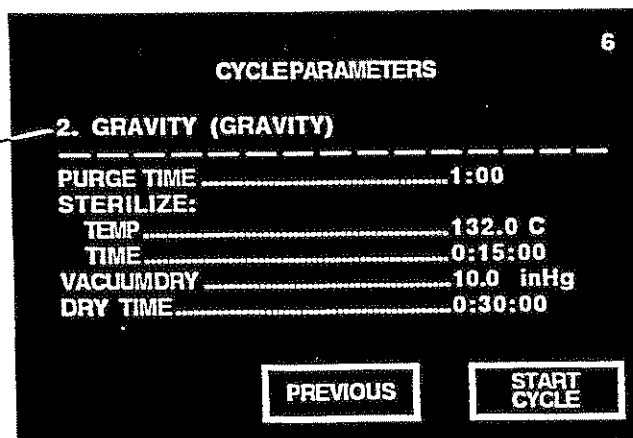


Pressing **TEST CYCLES** advances
display to screen #3.

Pressing **MAIN MENU** returns display to
screen #1.

4. Verify cycle parameters listed for the selected Gravity cycle are acceptable.

If listed cycle parameters are not acceptable, press **PREVIOUS** button
and refer to Section 7, Programming Cycle Values, for instructions on
changing cycle parameters.



Pressing **PREVIOUS** returns display to
screen #2.

Cycle Name
(Cycle Type)

5. To begin Gravity cycle operation, press **START CYCLE**.

NOTE: If START CYCLE is pressed while the chamber door is open, a display screen will appear directing the operator to close door before continuing cycle operation. Operator must reselect the cycle after door is closed.

NOTE: If a cycle is started when the sterilizer has not been fully calibrated, a display screen will appear indicating that the control is not calibrated. Sterilizer must be calibrated by a qualified service technician before processing loads.

Pressing **PREVIOUS** returns display to screen #2.

6

CYCLEPARAMETERS

2. GRAVITY (GRAVITY)

PURGE TIME _____ 1:00

STERILIZE:

TEMP _____ 132.0 C

TIME _____ 0:15:00

VACUUM DRY _____ 10.0 inHg

DRY TIME _____ 0:30:00

PREVIOUS

START
CYCLE

6. Sterilizer automatically progresses through the following cycle phases.

NOTE: If an alarm occurs during cycle operation, refer to Service and Maintenance Procedure for instructions on correcting the alarm condition

NOTE: If power is lost during cycle operation, cycle either continues in same phase or aborts if seal pressure is below 10 psig once power is restored.

- **Jacket Charge** - Jacket charges with steam to 1° less than the programmed sterilize temperature.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

GRAVITY CYCLE

PHASE: JACKETCHARGE

JACKET CHARGING TO: 120 C

CHAMBER: 32.0 C 00.0 psig

PROJECTED CYCLE COMPLETION TIME:

47:50 m:s

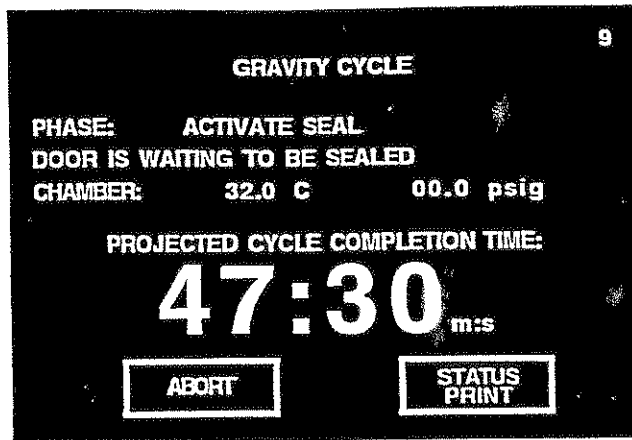
ABORT

STATUS
PRINT

- **Activate Seal** - Door seal fills with steam and expands against the sterilizer door opening, forming an air tight seal.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

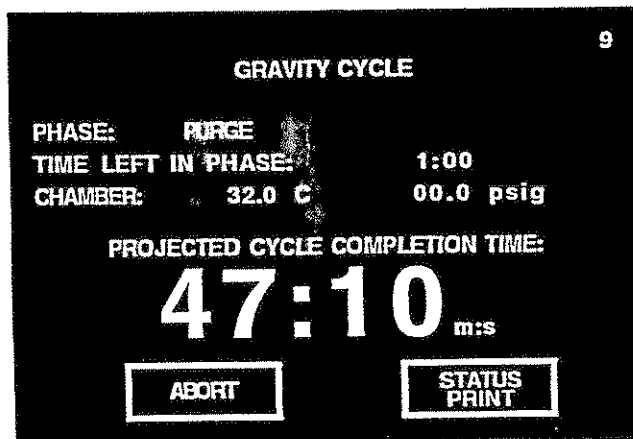
Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.



- **Purge** - Steam flows through the chamber for the programmed time interval.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.



NOTE: The projected cycle completion time shown on the display is estimated. The control automatically evaluates the cycle progress and corrects the estimated time at the beginning of each phase.

NOTE: Current time, chamber pressure and chamber temperature are printed at each transition point.

- **Charge** - Chamber charges with steam to the programmed sterilize temperature.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

GRAVITY CYCLE

PHASE: CHARGE

CHARGING TO: 132.0 C

CHAMBER: 32.0 C 00.0 psig

PROJECTED CYCLE COMPLETION TIME:

46:10 m:s

ABORT

STATUS PRINT

- **Sterilize** - Sterilize phase begins when chamber temperature is equal to or greater than the programmed sterilize temperature. Chamber temperature is printed every two minutes (or printed after each programmed print interval). The steam-to-jacket valve is regulated to maintain the chamber at the sterilize control temperature (control temperature = sterilize temperature + overdrive temperature).

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

GRAVITY CYCLE

PHASE: STERILIZE

TIME LEFT IN PHASE: 15:00

CHAMBER: 132.0 C 29.0 psig

PROJECTED CYCLE COMPLETION TIME:

44:00 m:s

ABORT

STATUS PRINT

- **Fast Exhaust** - Chamber is exhausted until chamber pressure reaches 4 psig.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

GRAVITY CYCLE

PHASE: FASTEXHAUST

FAST EXHAUSTING TO: 4.0 psig

CHAMBER: 133.5 C 30.0 psig

PROJECTED CYCLE COMPLETION TIME:

38:50 m:s

ABORT

STATUS PRINT

- **Vacuum Dry** - A vacuum is drawn in the chamber to the programmed vacuum dry point.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

GRAVITY CYCLE

PHASE: **VACUUM DRY**
 EVACUATING TO: **10.00 inHg**
 CHAMBER: **83.5 C** **2.0 psig**

PROJECTED CYCLE COMPLETION TIME:

33:20 m:s

ABORT

STATUS PRINT

NOTE: If dry time is programmed for 0 minutes, cycle will automatically skip the Vacuum Dry, Dry and Air Break phases, retract door seal and remove vapors for 1 minute before completing cycle.

- **Dry** - Dry phase begins once vacuum level in chamber reaches the programmed vacuum dry point. Chamber then continues to evacuate for the programmed time interval.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

GRAVITY CYCLE

PHASE: **DRY**
 TIME LEFT IN PHASE: **30:00**
 CHAMBER: **83.5 C** **10.0 inHg**

PROJECTED CYCLE COMPLETION TIME:

33:00 m:s

ABORT

STATUS PRINT

- **Air Break** - Filtered air enters the chamber to relieve the vacuum within the chamber.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

GRAVITY CYCLE

PHASE: **AIR BREAK**
 AIR BREAK TO: **2.0 inHg**
 CHAMBER: **83.5 C** **25.0 inHg**

PROJECTED CYCLE COMPLETION TIME:

0:30 m:s

ABORT

STATUS PRINT

- **Retract Seal** - Steam is exhausted from the door seal.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

GRAVITY CYCLE

PHASE: **RETRACTSEAL**
DOOR WAITING TO BE UNSEALED
 CHAMBER: **32.0 C** **00.0 psig**

PROJECTED CYCLE COMPLETION TIME:

0:20 m:s

ABORT

STATUS PRINT

NOTE: If sterilizer is equipped with double doors and interlock type 1 or 3 is programmed for this cycle, operator must select which door to unseal by pressing **UNSEAL DOOR** on the appropriate touch screen. Refer to Section 7 for description of interlock types.

- **Complete** - The complete tone sounds and the cycle summary and end-of-cycle messages are printed.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

7

GRAVITY CYCLE

PHASE: **COMPLETE**
OPEN DOOR(S) TO UNLOAD
 CHAMBER: **32.0 C** **00.0 psig**

ABORT

STATUS PRINT

⚠ WARNING - BURN HAZARD:
 When loading or unloading the sterilizer, always wear protective gloves and apron (also face shield if processing liquids). Sterilizer and shelves/loading car will be hot after running a cycle.

⚠ WARNING - FALL HAZARD:
 To prevent falls, keep floors dry by immediately wiping up any spilled liquids or condensation in sterilizer loading and unloading areas.

7. Once cycle is complete, open chamber door and unload sterilizer. Display returns to the main menu (screen #1).

Liquid Cycle Operation

⚠ WARNING - EXPLOSION HAZARD: Do not operate this sterilizer in the presence of flammable compounds.

⚠ WARNING - EXPLOSION HAZARD: This sterilizer is not designed to process flammable liquids.

⚠ WARNING - BURN HAZARD: When sterilizing liquids, you must observe the following procedures:

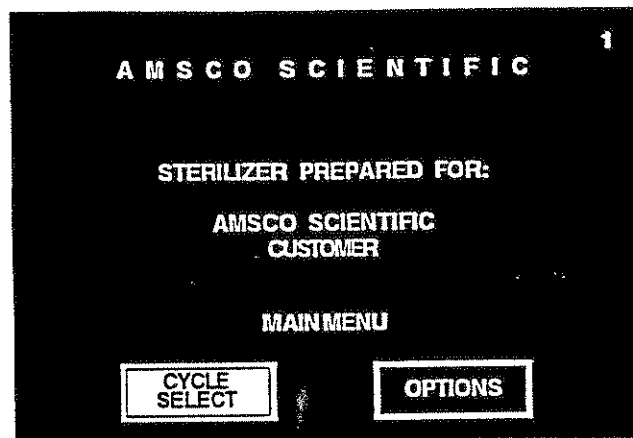
- Use LIQUID cycle only.
- Use only vented closures.
- Use only Type I borosilicate glass bottles.
- Do not allow hot bottles to be jolted.

Pressing **TEST CYCLES** advances display to screen #3.

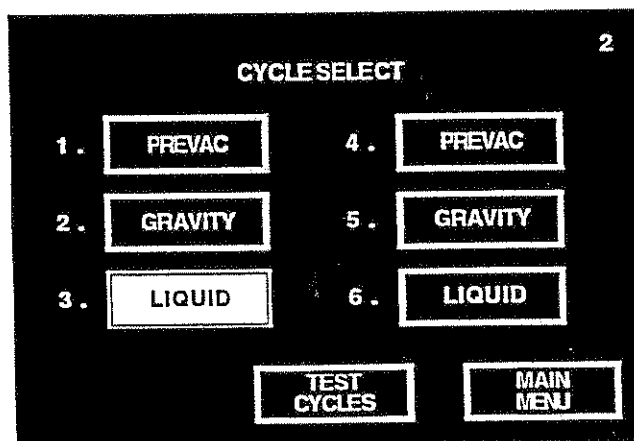
Pressing **MAIN MENU** returns display to screen #1.

The Liquid cycle is designed for sterilizing liquids and media in vented borosilicate glass or metal containers from 100° to 125°C (212° to 257°F).

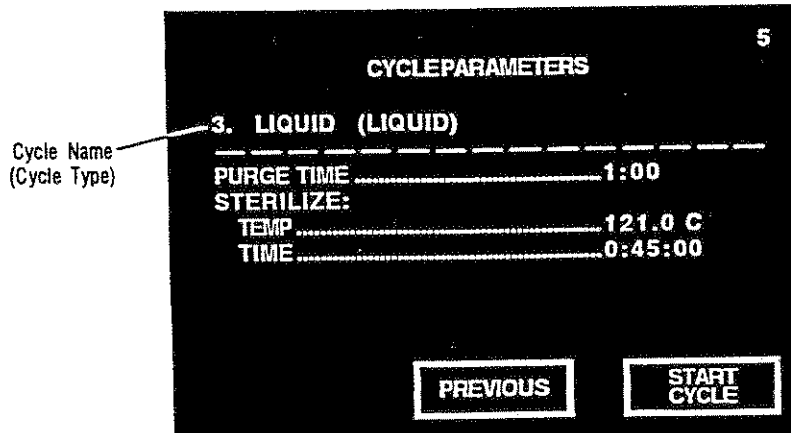
1. Before running this cycle, refer to "Before Operating Sterilizer" and "Load Sterilizer" at beginning of this section.
2. Press **CYCLE SELECT** on screen #1.



3. Press **LIQUID** button.



4. Verify cycle parameters listed for the selected Liquid cycle are acceptable. If listed cycle parameters are not acceptable, press **PREVIOUS** button and refer to Section 7, Programming Cycle Values, for instructions on changing cycle parameters.



Pressing **PREVIOUS** returns display to screen #2.

5. To begin Liquid cycle operation, press **START CYCLE**.

NOTE: If START CYCLE is pressed while the chamber door is open, a display screen will appear directing the operator to close door before continuing cycle operation. Operator must reselect the cycle after door is closed.

NOTE: If a cycle is started when the sterilizer has not been fully calibrated, a display screen will appear indicating that the control is not calibrated. Sterilizer must be calibrated by a qualified service technician before processing loads.

Pressing **PREVIOUS** returns display to screen #2.

5

CYCLEPARAMETERS

3. LIQUID (LIQUID)

PURGE TIME 1:00

STERILIZE:

TEMP 121.0 C

TIME 0:45:00

PREVIOUS START CYCLE

6. Sterilizer automatically progresses through the following cycle phases.

NOTE: If an alarm occurs during cycle operation, refer to Service and Maintenance Procedure for instructions on correcting the alarm condition.

NOTE: If power is lost during cycle operation, cycle either continues in same phase or aborts if seal pressure is below 10 psig once power is restored.

- **Jacket Charge** - Jacket charges with steam to 1° less than the programmed sterilize temperature.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

LIQUID CYCLE

PHASE: JACKET CHARGE

JACKET CHARGING TO: 120 C

CHAMBER: 32.0 C 00.0 psig

PROJECTED CYCLE COMPLETION TIME:

1:10 h:m

ABORT STATUS PRINT

- **Activate Seal** - Door seal fills with steam and expands against the sterilizer door opening, forming an air tight seal.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

LIQUID CYCLE

PHASE: **ACTIVATE SEAL**

DOOR IS WAITING TO BE SEALED

CHAMBER: 32.0 C 00.0 psig

PROJECTED CYCLE COMPLETION TIME:

1:00 h:m

ABORT

STATUS PRINT

- **Purge** - Steam flows through the chamber for the programmed time interval.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

LIQUID CYCLE

PHASE: **PURGE**

TIME LEFT IN PHASE: 1:00

CHAMBER: 32.0 C 00.0 psig

PROJECTED CYCLE COMPLETION TIME:

59:40 m:s

ABORT

STATUS PRINT

NOTE: The projected cycle completion time shown on the display is estimated. The control automatically evaluates the cycle progress and corrects the estimated time at the beginning of each phase.

NOTE: Current time, chamber pressure and chamber temperature are printed at each transition point.

- **Charge** - Chamber charges with steam to the programmed sterilize temperature.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

LIQUID CYCLE

PHASE: **CHARGE**

CHARGING TO: 121.0 C

CHAMBER: 110.0 C 10.0 psig

PROJECTED CYCLE COMPLETION TIME:

58:40 m:s

ABORT

STATUS PRINT

- **Sterilize** - Sterilize phase begins when chamber temperature is equal to or greater than the programmed sterilize temperature. Chamber temperature is printed every two minutes (or printed after each programmed print interval). The steam-to-jacket valve is regulated to maintain the chamber at the sterilize control temperature (control temperature = sterilize temperature + overdrive temperature).

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

LIQUID CYCLE

PHASE: **STERILIZE**

TIME LEFT IN PHASE: **30:00**

CHAMBER: **121.0 C 19.0 psig**

PROJECTED CYCLE COMPLETION TIME:

50:40 m:s

ABORT

STATUS PRINT

- **Slow Exhaust** - Chamber is slowly exhausted until chamber pressure reaches 0 psig.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

LIQUID CYCLE

PHASE: **SLOWEXHAUST**

EXHAUSTING TO: **0.0 psig**

CHAMBER: **122.5 C 19.0 psig**

PROJECTED CYCLE COMPLETION TIME:

20:40 m:s

ABORT

STATUS PRINT

- **Retract Seal** - Steam is exhausted from the door seal.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

LIQUID CYCLE

PHASE: **RETRACT SEAL**

DOOR WAITING TO BE UNSEALED

CHAMBER: **95.5 C 00.0 psig**

PROJECTED CYCLE COMPLETION TIME:

0:20 m:s

ABORT

STATUS PRINT

NOTE: If sterilizer is equipped with double doors and interlock type 1 or 3 is programmed for this cycle, operator must select which door to unseal by pressing UNSEAL DOOR on the appropriate touch screen. Refer to Section 7 for description of interlock types.

- **Door Unsealed to Cool Liquids** - The tone sounds for 5 seconds and the cycle summary and the end of cycle messages are printed.

The printer will print:

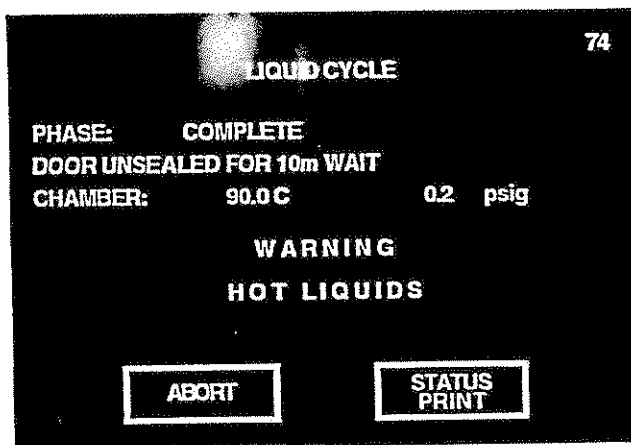
```

+++++++
+          WARNING          +
+        HOT LIQUIDS        +
+      SEAL RETRACTED      +
+    UNLOAD IN 10 min.    +
+++++++
+ SEAL OFF      10:02:48A  +

```

Pressing ABORT advances display to screen #76. Refer to "Aborting Cycles", later in this section.

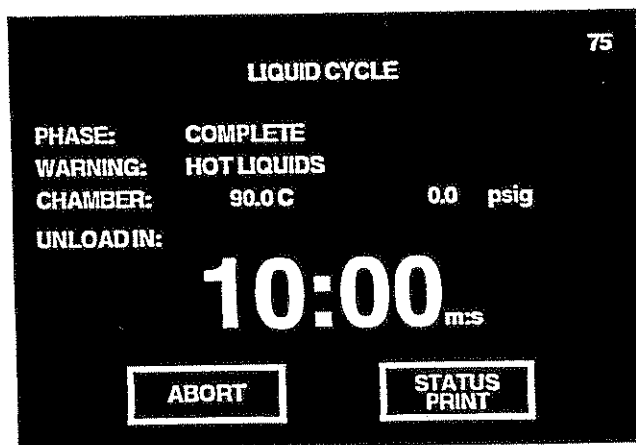
Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.



- **10 MINUTE COOL** - After the door is open 1 inch allow 10 minutes before unloading liquids..

Pressing ABORT advances display to screen #76. Refer to "Aborting Cycles", later in this section.

Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.



- **Complete** - The complete tone sounds and the cycle summary and end-of-cycle messages are printed.

Pressing **ABORT** advances display to screen #11. Refer to "Aborting Cycles", later in this section.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

7

LIQUID CYCLE

PHASE: COMPLETE
OPEN DOOR(S) TO UNLOAD
CHAMBER: 32.0 C 00.0 psig

W A R N I N G
H O T L I Q U I D S !

ABORT

**STATUS
PRINT**

⚠ WARNING - BURN HAZARD:
When loading or unloading the sterilizer, always wear protective gloves and apron (also face shield if processing liquids). Sterilizer and shelves/loading car will be hot after running a cycle.

⚠ WARNING - BURN HAZARD:
When sterilizing liquids, to prevent personal injury or property damage resulting from bursting bottles and hot fluid, do not allow hot bottles to be jolted. Do not move bottles if any boiling or bubbling is present.

⚠ WARNING - FALL HAZARD:
To prevent falls, keep floors dry by immediately wiping up any spilled liquids or condensation in sterilizer loading and unloading areas.

7. Once cycle is complete, open chamber door and unload sterilizer. Display returns to the main menu (screen #1).

Leak Test Cycle Operation

WARNING - STERILITY ASSURANCE HAZARD: Load sterility may be compromised if the biological air removal or air leak test indicates a potential problem. If these indicators show a potential problem, refer the situation to a qualified service technician before using the sterilizer further.

WARNING - STERILITY ASSURANCE HAZARD: According to AAMI standards, a measured leak rate greater than 1 mm Hg/minute indicates a problem with the sterilizer. Refer the situation to a qualified service technician before using the sterilizer further.

The Vacuum Leak Test cycle is designed to measure the integrity of the sealed pressure vessel and associated piping. During this cycle, the control automatically checks for vacuum leaks in the piping and door seal. Leak Test cycle can also be used to confirm that the sterilizer piping is intact after performing repairs.

NOTE: This test is not a substitute for the DART (Bowie-Dick) test.

If sterilizer fails the leak test, the sterilizer must be inspected by a qualified service technician.

NOTE: The measured leak rate (mm Hg per minute) is calculated by the control over a timed 10 minute period and is included on the cycle printout. A leak rate of 1 mm Hg/minute or less is considered acceptable.

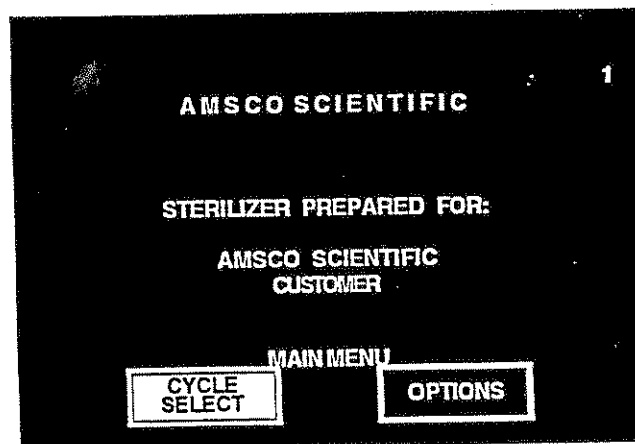
Leak Test cycle is preprogrammed, and cycle parameters are fixed and cannot be changed by the customer.

The Vacuum Leak Test cycle must be run on the sterilizer at least once each week. The Leak Test cycle should be run as the first cycle of the day.

1. Before running this cycle, refer to "Before Operating Sterilizer" at beginning of this section.

NOTE: If sterilizer is equipped with double doors, the interlock type for Leak Test cycle is factory set and fixed at Type #1. Refer to Section 7 for description of interlock types.

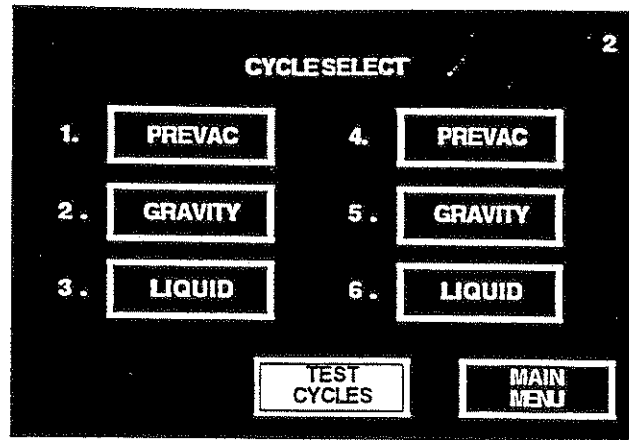
2. Press **CYCLE SELECT** on screen #1.



Pressing **OPTIONS** advances display to the first Out of Cycle Options menu (screen #13).

3. Press **TEST CYCLES** button.

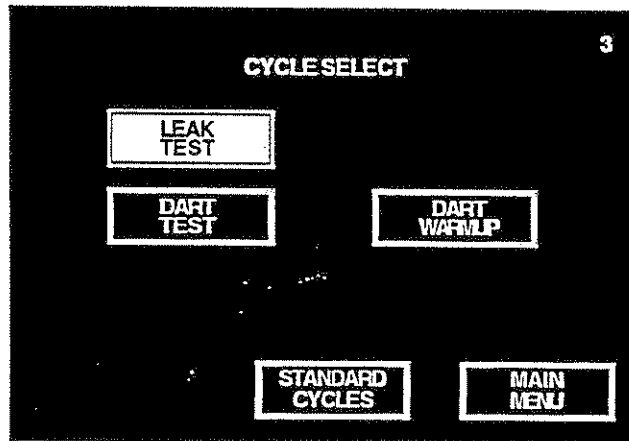
Pressing MAIN MENU returns display to screen #1.



4. To begin Leak Test, press **LEAK TEST**.

Pressing STANDARD CYCLES returns display to screen #2.

Pressing MAIN MENU returns display to screen #1.



NOTE: If LEAK TEST is pressed while the chamber door is open, a display screen will appear directing the operator to close door before continuing cycle operation. Operator must reselect LEAK TEST after the door is closed.

NOTE: If a cycle is started when the sterilizer has not been fully calibrated, a display screen will appear indicating that the control is not calibrated. Sterilizer must be calibrated by a qualified service technician before processing loads.

5. Sterilizer automatically progresses through the following cycle phases.

NOTE: If an alarm occurs during cycle operation, refer to Service and Maintenance Procedure for instructions on correcting the alarm condition.

NOTE: If power is lost during cycle operation, cycle either continues in same phase or aborts if seal pressure is below 10 psig once power is restored.

- **Jacket Charge** - Jacket charges with steam to 131°C (268°F).
- **Activate Seal** - Door seal fills with steam and expands against the sterilizer door opening, forming an air tight seal.
- **Purge** - Steam flows through the chamber for one minute.

NOTE: Purge time for large units is 4 minutes.

NOTE: The projected cycle completion time shown on the display is estimated. The control automatically evaluates the cycle progress and corrects the estimated time at the beginning of each phase.

NOTE: Current time, chamber pressure and chamber temperature are printed at each transition point.

- **Vacuum Pulse #1 Exhaust** - Chamber is exhausted to 4 psig.
 - **Vacuum Pulse #1 Evacuate** - A vacuum is drawn in the chamber to 10 inHg.
 - **Charge Pulse #1** - Chamber charges with steam up to 26 psig.
 - **Vacuum Pulse #2 Exhaust** - Chamber is exhausted to 4 psig.
 - **Vacuum Pulse #2 Evacuate** - A vacuum is drawn in the chamber to 10 inHg.
 - **Charge Pulse #2** - Chamber charges with steam up to 26 psig.
 - **Charge** - After the last prevacuum pulse, chamber charges with steam to 132°C (270°F).
 - **Evacuate** - Chamber exhausts and a vacuum is drawn in the chamber for 10 minutes.
 - **Stabilize** - The chamber stabilizes for 2 minutes. This phase ensures a constant vacuum level after the vacuum system has been turned off.
 - **Leak Test** - The chamber remains idle for 10 minutes. On completion of phase, control calculates the leak rate based on the initial and final pressure readings taken during the 10 minute period.
 - **Air Break** - Filtered air enters the chamber to relieve the vacuum within the chamber.
 - **Retract Seal** - Steam is exhausted from the door seal.
 - **Complete** - The complete tone sounds and the cycle summary and end-of-cycle messages are printed. Display returns to the main menu (screen #1).
6. Once the sterilizer completes and passes the Leak Test cycle, the unit can be safely used for weekly processing.

NOTE: Sequential records of tests should be kept to detect if any major changes in leak rates are occurring. Maintenance can then be scheduled to correct any loose fittings, bad gaskets, etc.

DART Warmup Cycle Operation

The DART Warmup cycle is designed to bring the chamber up to operating temperature in preparation for the DART (Bowie-Dick) Test cycle.

DART Warmup cycle is preprogrammed, and cycle parameters are fixed and cannot be changed by the customer.

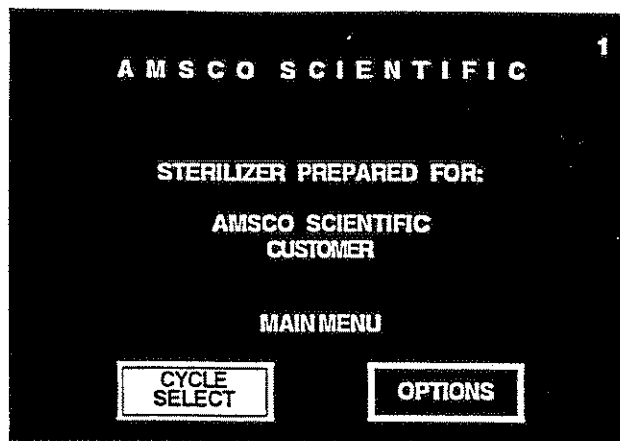
The DART Warmup cycle should be run as the first cycle of the day, prior to performing a DART Test cycle.

1. Before running this cycle, refer to "Before Operating Sterilizer" at beginning of this section.

NOTE: If sterilizer is equipped with double doors, the interlock type for DART Warmup cycle is factory set and fixed at Type #1. Refer to Section 7 for description of interlock types.

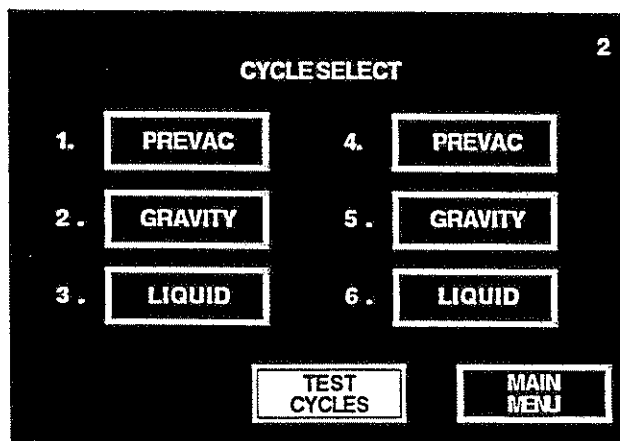
2. Press **CYCLE SELECT** on screen #1.

Pressing OPTIONS advances display to the first Out of Cycle Options menu (screen #13).



3. Press **TEST CYCLES** button.

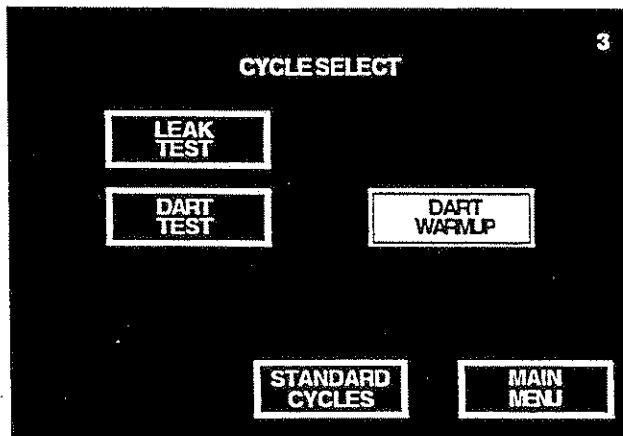
Pressing MAIN MENU returns display to screen #1.



4. To begin DART Warmup, press **DART WARMUP**.

Pressing STANDARD CYCLES returns display to screen #2.

Pressing MAIN MENU returns display to screen #1.



NOTE: If DART WARMUP is pressed while the chamber door is open, a display screen will appear directing the operator to close door before continuing cycle operation. Operator must reselect DART WARMUP after the door is closed.

NOTE: If a cycle is started when the sterilizer has not been fully calibrated, a display screen will appear indicating that the control is not calibrated. Sterilizer must be calibrated by a qualified service technician before processing loads.

5. Sterilizer automatically progresses through the following cycle phases.

NOTE: If an alarm occurs during cycle operation, refer to Service and Maintenance Procedure for instructions on correcting the alarm condition.

NOTE: If power is lost during cycle operation, cycle either continues in same phase or aborts if seal pressure is below 10 psig once power is restored.

- **Jacket Charge** - Jacket charges with steam to 131°C (268°F).
- **Activate Seal** - Door seal fills with steam and expands against the sterilizer door opening, forming an air tight seal.
- **Purge** - Steam flows through the chamber for one minute.

NOTE: Purge time for large units is 4 minutes.

NOTE: The projected cycle completion time shown on the display is estimated. The control automatically evaluates the cycle progress and corrects the estimated time at the beginning of each phase.

NOTE: Current time, chamber pressure and chamber temperature are printed at each transition point.

- **Charge** - Chamber charges with steam to 132°C (270°F).
- **Sterilize** - Sterilize phase begins when chamber temperature is equal to or greater than 132°C (270°F). Chamber temperature is printed every two minutes (or printed after each programmed print interval). The steam-to-jacket valve is regulated to maintain the chamber at 133.5°C (272°F). Duration of sterilize phase is approximately 3-1/2 minutes.
- **Fast Exhaust** - Chamber is exhausted until chamber pressure reaches 4 psig.
- **Vacuum Dry** - A vacuum is drawn in the chamber to the vacuum dry point.
- **Dry** - Chamber continues to evacuate for one minute.
- **Air Break** - Filtered air enters the chamber to relieve the vacuum within the chamber.
- **Retract Seal** - Steam is exhausted from the door seal.
- **Complete** - The complete tone sounds and the cycle summary and end-of-cycle messages are printed. Display returns to the main menu (screen #1).

6. Once cycle is complete, the DART Test cycle can be run. Refer to "DART Test Cycle Operation", next in this section.

DART Test Cycle Operation

WARNING - STERILITY ASSURANCE HAZARD: Load sterility may be compromised if the biological air removal or air leak test indicates a potential problem. If these indicators show a potential problem, refer the situation to a qualified service technician before using the sterilizer further.

WARNING - PERSONAL INJURY HAZARD: When closing the chamber door, keep hands and arms out of the door opening and make sure opening is clear of any obstructions.

The DART (Bowie-Dick) Test cycle is designed to test and document the adequacy of air removal from the chamber and a sample challenge load. Refer to "Testing for Prevacuum Efficiency" in Section 2, Techniques of Sterilization.

DART Test cycle is preprogrammed, and cycle parameters are fixed and cannot be changed by the customer.

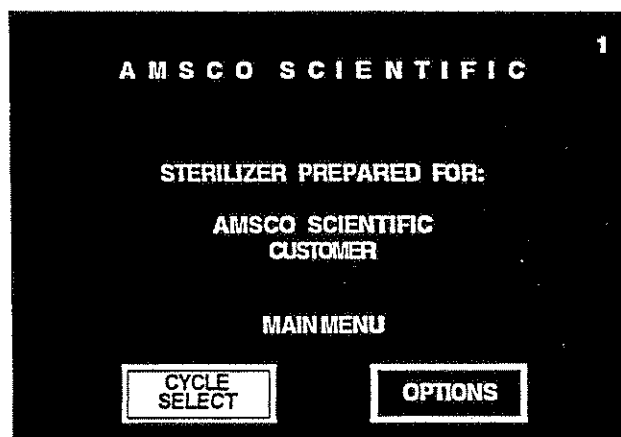
Chamber must be at operating temperature when performing a DART Test cycle. The DART Warmup cycle should be completed prior to performing the DART Test. Refer to "DART Warmup Cycle Operation" included in this section.

1. Before running this cycle, refer to "Before Operating Sterilizer" at beginning of this section.
2. If necessary, prepare a test pack as described under "Constructing a Test Pack" in Section 2, Techniques of Sterilization.
3. Open chamber door and load chamber with DART pack or prepared test pack.

NOTE: If sterilizer is equipped with double doors, the interlock type for DART Test cycle is factory set and fixed at Type #1. Refer to Section 7 for description of interlock types.

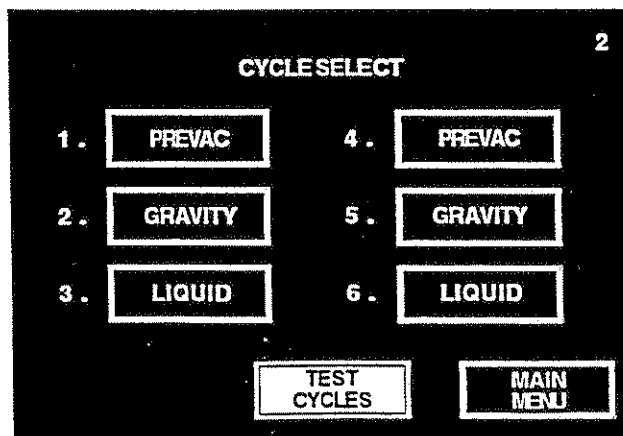
4. Close chamber door.
5. Press **CYCLE SELECT** on screen #1.

Pressing OPTIONS advances display to the first Out of Cycle Options menu (screen #13).



6. Press **TEST CYCLES** button.

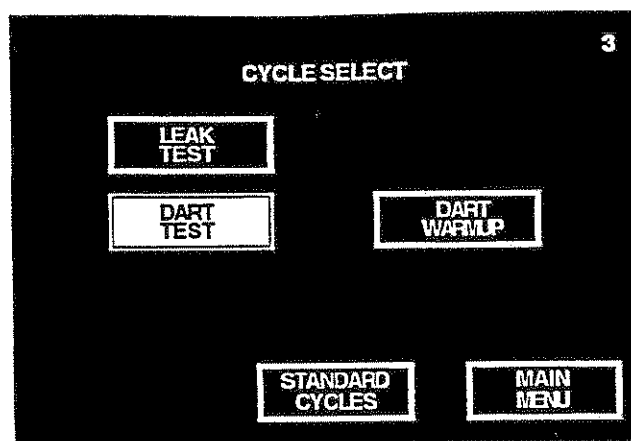
Pressing MAIN MENU returns display to screen #1.



7. To begin DART Test, press **DART TEST**.

Pressing **STANDARD CYCLES** returns display to screen #2.

Pressing **MAIN MENU** returns display to screen #1.



NOTE: If DART TEST is pressed while the chamber door is open, a display screen will appear directing the operator to close door before continuing cycle operation. Operator must reselect DART TEST after the door is closed.

NOTE: If a cycle is started when the sterilizer has not been fully calibrated, a display screen will appear indicating that the control is not calibrated. Sterilizer must be calibrated by a qualified service technician before processing loads.

8. Sterilizer automatically progresses through the following cycle phases.

NOTE: If an alarm occurs during cycle operation, refer to Service and Maintenance Procedure for instructions on correcting the alarm condition.

NOTE: If power is lost during cycle operation, cycle either continues in the same phase or aborts if seal pressure is below 10 psig once power is restored.

- **Jacket Charge** - Jacket charges with steam to 131°C (268°F).
- **Activate Seal** - Door seal fills with steam and expands against the sterilizer door opening, forming an air tight seal.
- **Purge** - Steam flows through the chamber for one minute.

NOTE: Purge time for large units is 4 minutes.

NOTE: The projected cycle completion time shown on the display is estimated. The control automatically evaluates the cycle progress and corrects the estimated time at the beginning of each phase.

NOTE: Current time, chamber pressure and chamber temperature are printed at each transition point.

- **Vacuum Pulse #1 Exhaust** - Chamber is exhausted to 4 psig.
- **Vacuum Pulse #1 Evacuate** - A vacuum is drawn in the chamber to 10 inHg.
- **Charge Pulse #1** - Chamber charges with steam up to 26 psig.
- **Vacuum Pulse #2 Exhaust** - Chamber is exhausted to 4 psig.
- **Vacuum Pulse #2 Evacuate** - A vacuum is drawn in the chamber to 10 inHg.

⚠ WARNING - BURN HAZARD:
When loading or unloading the sterilizer, always wear protective gloves and apron (also face shield if processing liquids). Sterilizer and shelves/loading car will be hot after running a cycle.

⚠ WARNING - FALL HAZARD:
To prevent falls, keep floors dry by immediately wiping up any spilled liquids or condensation in sterilizer loading and unloading areas.

- **Charge Pulse #2** - Chamber charges with steam up to 26 psig.
- **Charge** - After the last prevacuum pulse, chamber charges with steam to 132°C (270°F).
- **Sterilize** - Sterilize phase begins when chamber temperature is equal to or greater than 132°C (270°F). Chamber temperature is printed every two minutes (or printed after each programmed print interval). The steam-to-jacket valve is regulated to maintain the chamber at 133.5°C (272°F). Duration of sterilize phase is approximately 3-1/2 minutes.
- **Fast Exhaust** - Chamber is exhausted until chamber pressure reaches to 4 psig.
- **Vacuum Dry** - A vacuum is drawn in the chamber to the vacuum dry point.
- **Dry** - Chamber continues to evacuate for one minute.
- **Air Break** - Filtered air enters the chamber to relieve the vacuum within the chamber.
- **Retract Seal** - Steam is exhausted from the door seal.
- **Complete** - The complete tone sounds and the cycle summary and end-of-cycle messages are printed. Display returns to the main menu (screen #1).

9. Once cycle is complete, open chamber door and unload test pack.
10. Forward the exposed test pack to appropriate personnel for examination.

Aborting Cycles

While running a processing cycle, it may be necessary to end (abort) the cycle operation due to an incorrect cycle selection or a sterilizer malfunction.

A cycle can be aborted any time during normal unit operation. If a cycle is aborted, the operator/supervisor must decide if the chamber load can be reprocessed.

To abort a cycle in progress:

1. Press **ABORT** on the in-cycle status screen.

Pressing **STATUS PRINT** generates a printout of the current sterilizer chamber status.

9

GRAVITY CYCLE

PHASE: **STERILIZE**

TIME LEFT IN PHASE: **4:00**

CHAMBER: **132.0 C 29.0 psig**

PROJECTED CYCLE COMPLETION TIME:

33:00 m:s

ABORT

STATUS PRINT

2. Screen #11 allows operator a final chance to continue with the current cycle in progress instead of aborting cycle operation.

Pressing CONTINUE CYCLE resumes cycle operation at the point where it was interrupted. Display returns to the corresponding in-cycle status screen.

11

CYCLEABORTACKNOWLEDGE
ARE YOU SURE
YOU WISH TO ABORT CYCLE?

ABORT

CONTINUE
CYCLE

If the cycle is aborted, the cycle will end. The cycle will safely exhaust or air break to atmospheric pressure. A vapor removal phase will eliminate steam vapors in the chamber.

3. Press **ABORT** on screen #11. Printer records time the cycle was aborted.
- If cycle is aborted while pressure is in the chamber, cycle automatically advances to the exhaust phase. Control system safely exhausts chamber and removes vapors before unsealing the chamber door.

Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.

10

GRAVITY CYCLE

PHASE: FASTEXHAUST
FAST EXHAUST TO: 2.0 psig
CHAMBER: 133.5 C 31.0 psig

CYCLE ABORTED.

STATUS
PRINT

- If cycle is aborted while a vacuum is in the chamber, cycle automatically advances to the air break phase. Control system safely relieves chamber vacuum before unsealing the chamber door.

Pressing STATUS PRINT generates a printout of the current sterilizer chamber status.

10

GRAVITY CYCLE

PHASE: AIR BREAK
TIME LEFT IN PHASE 1:00
CHAMBER: 90.5 C 5.0 inHg

CYCLE ABORTED.

STATUS
PRINT

⚠ WARNING - BURN HAZARD:
When loading or unloading the sterilizer, always wear protective gloves and apron (also face shield if processing liquids). Sterilizer and shelves/loading car will be hot after running a cycle.

⚠ WARNING - FALL HAZARD:
To prevent falls, keep floors dry by immediately wiping up any spilled liquids or condensation in sterilizer loading and unloading areas.

4. Once door is unsealed, display returns to the main menu (screen #1) and sterilizer may be unloaded.

IMPORTANT: The operator/supervisor must decide if the chamber load must be reprocessed after the cycle was aborted.

ENTERING ACCESS CODE

6

The access code feature is used to secure the sterilizer against unauthorized usage or programming. Separate access codes can be programmed to lock out sterilizer usage, the Change Values menu and the Supervisory mode.

NOTE: Access code is always activated for entry into the Supervisory mode. Refer to Section 9, Out of Cycle Options, for details on the Supervisory mode.

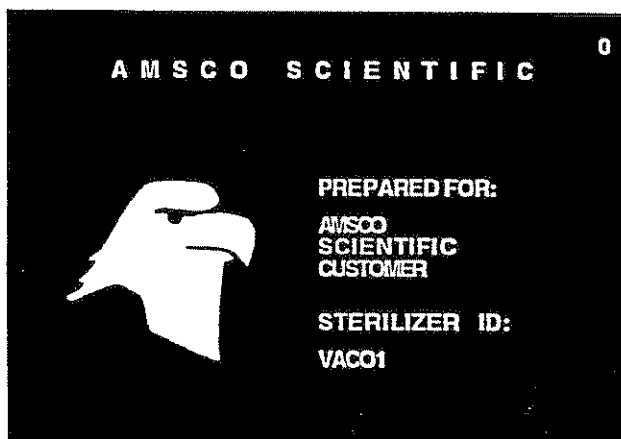
Access codes can be issued for up to six different operators. Each operator can be assigned two separate codes; one to access sterilizer usage and one to access Change Values menu.

NOTE: Operator name and access codes are activated and assigned from the Supervisory mode. Refer to Section 9, Out of Cycle Options.

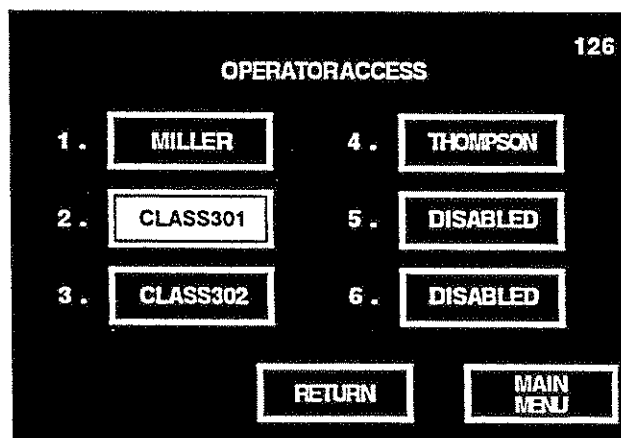
Sterilizer Usage Locked Out

To operate sterilizer when the access code feature is activated:

1. Press the **EAGLE** on screen #0.



2. Press assigned **operator button**.



Pressing RETURN returns display to screen #0.

Pressing MAIN MENU returns display to screen #0.

NOTE: Screen #126 lists those operators which have been assigned an access code. If an operator button has not been assigned an access code, the button will read DISABLED.

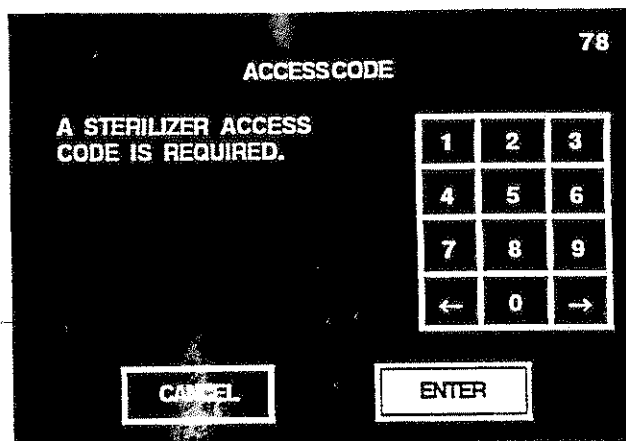
3. Enter assigned four-digit sterilizer access code using the numeric keypad. Once code is correctly entered, press **ENTER**.

NOTE: If incorrect code is entered, pressing ENTER denies operator usage of the sterilizer and returns display to screen #0.

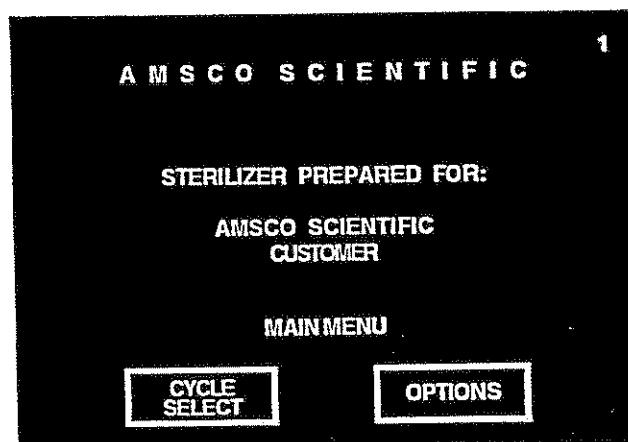
Pressing ← on numeric keypad moves the entry location to the left.

Pressing → on numeric keypad moves the entry location to the right.

Pressing CANCEL returns display to screen #0.



4. Display advances to main menu (screen #1) and printer records name of operator and the date and time when sterilizer was accessed. Operator may now use the sterilizer as described in Section 5, Sterilizer Operation.

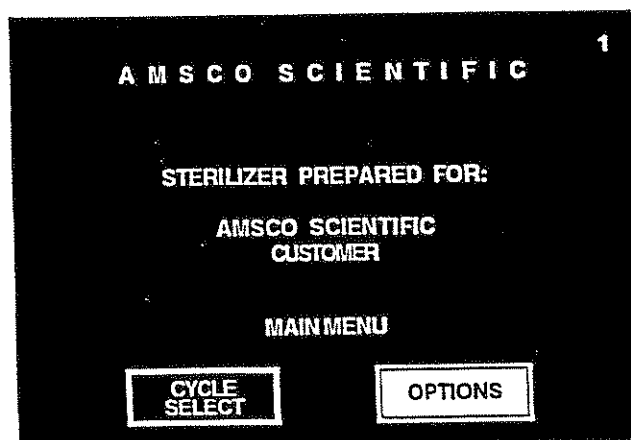


Change Values Menu Locked Out

To access the Change Values menu when the access code feature is activated:

1. Press **OPTIONS** on screen #1.

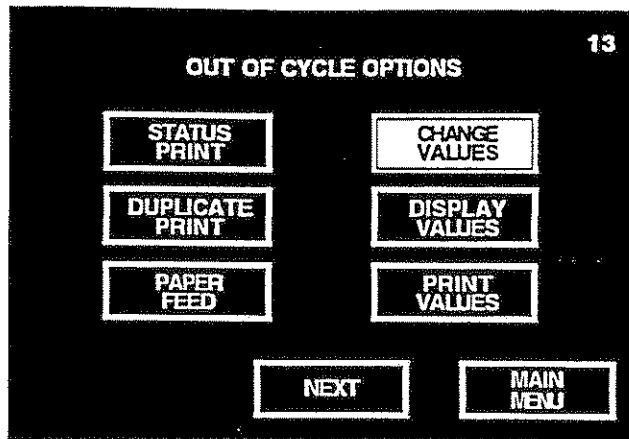
Pressing CYCLE SELECT advances display to the first Cycle Select menu (screen #2).



2. Press **CHANGE VALUES**.

Pressing **NEXT** advances display to screen #87.

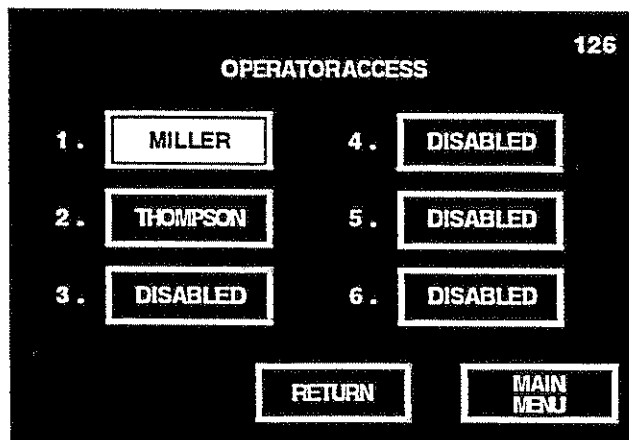
Pressing **MAIN MENU** returns display to screen #1.



3. Press assigned **operator button**.

Pressing **RETURN** returns display to screen #13.

Pressing **MAIN MENU** returns display to screen #1.



NOTE: Screen #126 lists those operators which have been assigned an access code. If an operator button has not been assigned an access code, the button will read **DISABLED**.

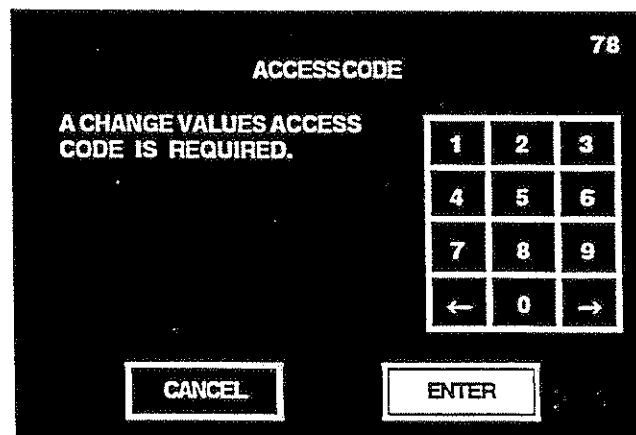
4. Enter assigned four-digit change values access code using the numeric keypad. Once code is correctly entered, press **ENTER**.

NOTE: If incorrect code is entered, pressing **ENTER** denies access to the Change Values menu and returns display to screen #13.

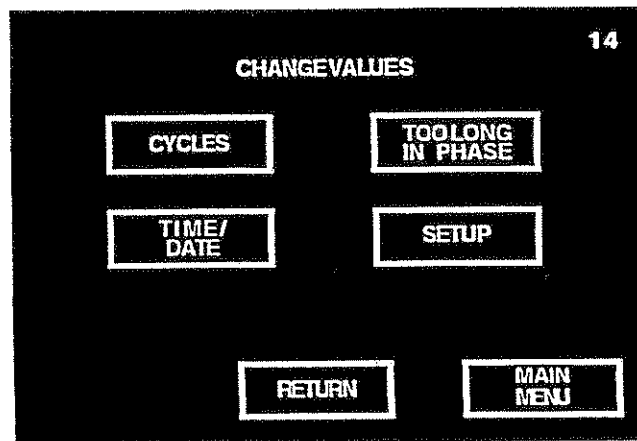
Pressing **←** on numeric keypad moves the entry location to the left.

Pressing **→** on numeric keypad moves the entry location to the right.

Pressing **CANCEL** returns display to screen #13.



5. Display advances to the Change Values menu (screen #14) and printer records name of operator and the date and time when Change Values was accessed. Operator may now modify the cycle values and sterilizer operating parameters. Refer to Section 7, Programming Cycle Values, and Section 8, Programming Operating Parameters, for details on using the Change Values menu.



NOTE: Screen #14 lists those values and parameters which can be modified by the operator. If any of these values are locked out, the corresponding button will read "LOCKOUT".

The Eagle Century Series sterilizer is factory programmed with default processing cycles and cycle values (see Table 7-1). These preset values (parameters) can be modified to process varying loads which occur in the sterilizer's operating environment.

NOTE: Control will default to the factory-programmed values if a battery or battery-powered memory failure occurs.

This section outlines how to change the cycle values only. For details on modifying the sterilizer operating parameters, refer to Section 8, Programming Operating Parameters.

Table 7-1. Default Processing Cycles and Cycle Values (Parameters)

Prevacuum Cycle (Cycles 1 and 4) - for sterilizing heat- and moisture-stabile materials utilizing vacuum-assisted air removal process.	Gravity Cycle (Cycles 2 and 5) - for sterilizing heat- and moisture-stabile materials.	Liquid Cycle (Cycles 3 and 6) - for sterilizing liquids and media in vented borosilicate glass or metal containers.
Purge Time** = 1:00	Purge Time** = 1:00	Purge Time** = 1:00
Pulses = 4	Sterilize Time = 15:00	Sterilize Time = 45:00
Max. Pressure = 26.0 psig	Sterilize Temp. = 132°C	Sterilize Temp. = 121°C
Min. Pressure = 10.0 inHg	Overdrive = 1.5°C	Overdrive = 1.5°C
Sterilize Time = 4:00	Under Temp. = 1.0°C	Under Temp. = 1.0°C
Sterilize Temp. = 132.0°C	Over Temp. = 6.0°C	Over Temp. = 6.0°C
Overdrive = 1.5°C	Print Interval = 2 min	Print Interval = 2 min
Under Temp. = 1.0°C	Vacuum Dry = 10.0 inHg	Interlock* = 2
Over Temp. = 6.0°C	Dry Time = 5:00	
Print Interval = 2 min	Interlock* = 2	
Vacuum Dry = 10.0 inHg		
Dry Time = 5:00		
Interlock* = 2		

* Double Door Units Only

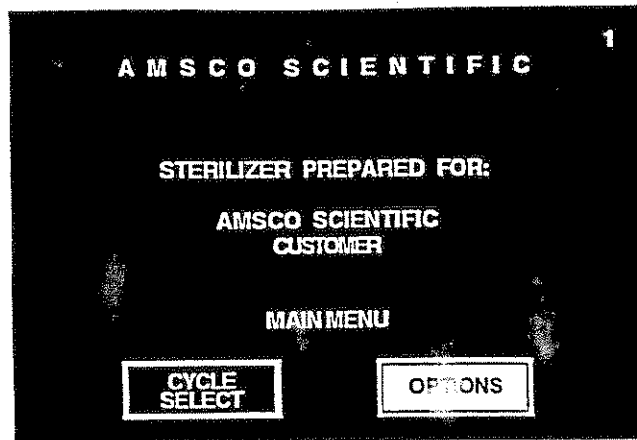
** 4:00 for large units

Access Cycle Menu - Change Cycle Values

To modify the preset cycle values, access Cycle Menu - Change Cycle Values (screen #15) as follows:

1. Press **OPTIONS** on screen #1.

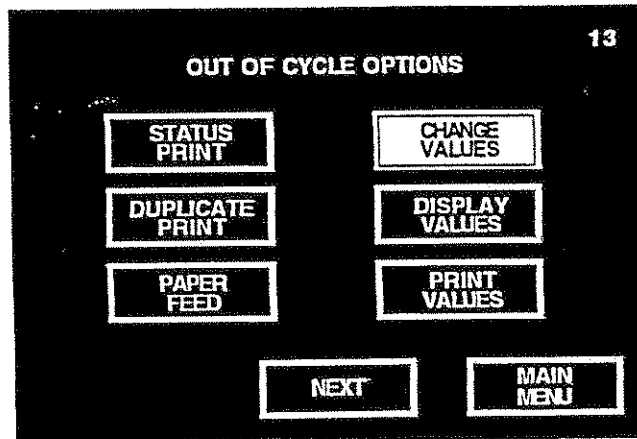
Pressing CYCLE SELECT advances display to the first Cycle Select menu (screen #2).



2. Press **CHANGE VALUES**. Printer records the date and time when Change Values option was selected.

Pressing NEXT advances display to screen #87.

Pressing MAIN MENU returns display to screen #1.

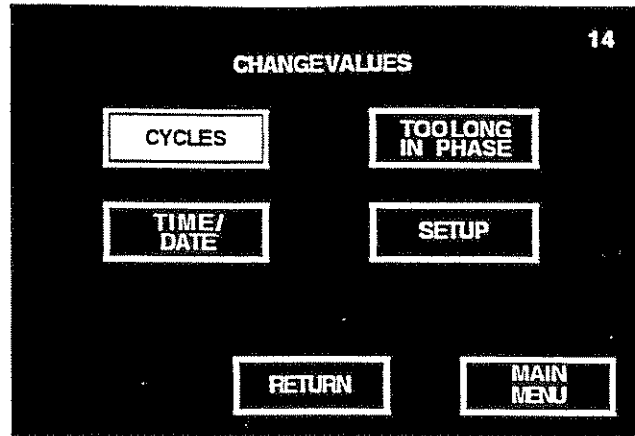


NOTE: If access code feature is activated, an assigned four-digit code must be correctly entered before operator can change values. Refer to Section 6, Entering Access Code.

3. Press **CYCLES** button.

Pressing RETURN returns display to screen #13.

Pressing MAIN MENU returns display to screen #1.

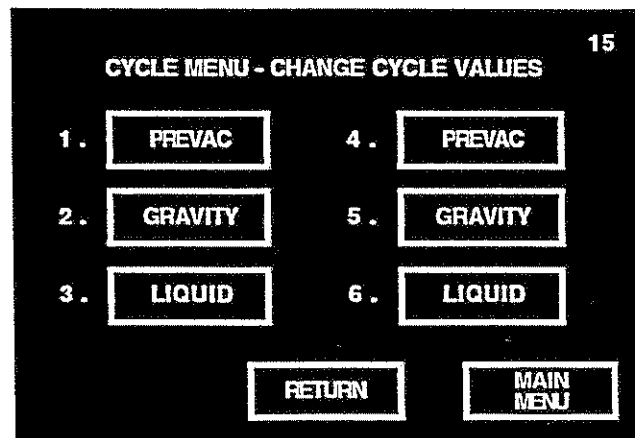


4. Screen #15 allows operator to select the cycle to be modified. Pressing the cycle button corresponding with the cycle to be changed, advances display into the Change Values procedure for that cycle.

For example: To change the values programmed for the first cycle, press 1. PREVAC button.

Pressing RETURN returns display to screen #14.

Pressing MAIN MENU returns display to screen #1.



5. Refer to "Change Values Procedure", next in this section, for a step-by-step example of changing the default Prevacuum cycle values. The procedures for changing the Gravity and Liquid cycle values are the same, with the exception that some values which can be programmed are different for each cycle.

Change Values Procedure

The Change Values procedure is used to change preset cycle values (parameters) for a particular cycle. The following procedure is an example of the Change Values procedure for a Prevacuum cycle. The cycle phase values depicted on the touch screen examples are the settings of the default Prevacuum cycle.

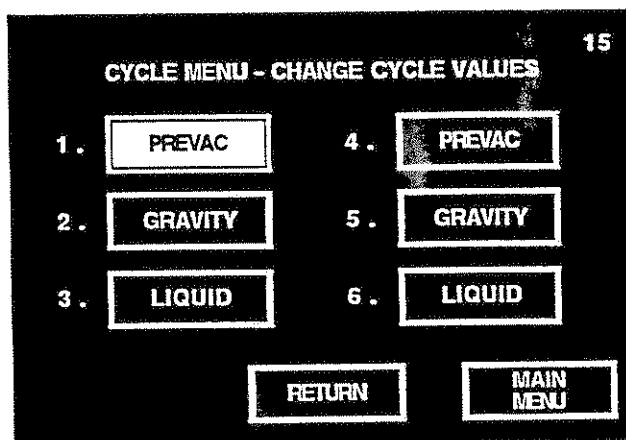
The procedures for changing the Gravity and Liquid cycle values are similar, with the exception that some programmable Gravity and Liquid cycle values are different.

IMPORTANT NOTE: If preset cycle values are changed, it is necessary for the operator to verify the efficacy of the changed cycle.

1. Access Cycle Menu - Change Cycle Values (screen #15) as described at the beginning of this section.
2. Press **PREVAC** button.

Pressing **RETURN** returns display to screen #14.

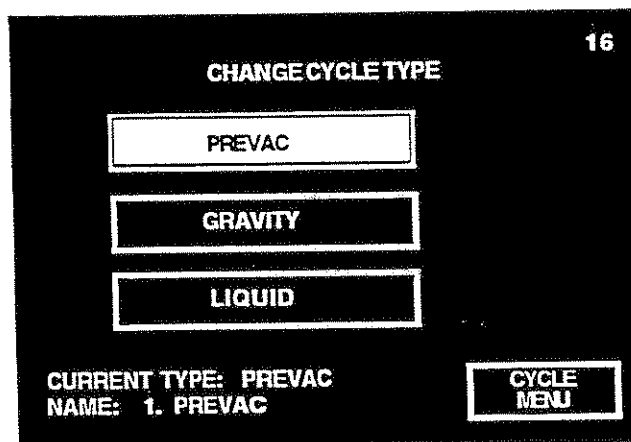
Pressing **MAIN MENU** returns display to screen #1.



3. Screen #16 allows operator to choose the type of cycle that will be assigned to the selected cycle button. The current cycle name and assigned cycle type are shown at the bottom of the display.

For this example, press **PREVAC** to assign a Prevacuum cycle type.

Pressing **CYCLE MENU** returns display to screen #15.



4. Screen #20 is the first of three menu screens which list the programmable values for the Prevacuum cycle type. To change any of the listed cycle values, press the corresponding button.

NOTE: A definition of each cycle value is given on the corresponding display screen.

Pressing **CYCLE MENU** returns display to screen #15.

Pressing **NEXT** advances display to screen #21.

Pressing **MAIN MENU** returns display to screen #1.

20

CHANGE VALUES - 1. PREVAC (PREVAG)

CYCLENAME = PREVAC
PURGE TIME = 1:00
PULSES = 4
MAX. PRESS. = 26.0 psig
MIN. PRESS. = 10.0 inHg

Cycle Name
(Cycle Type)

CYCLE
MENU

NEXT

MAIN
MENU

- Pressing **CYCLE NAME** advances display to screen #77. This screen allows operator to enter a custom name for the selected cycle.

Enter customized cycle name, maximum of 8 characters, using the alphanumeric keypad. Cycle name appears on display as it is being entered.

NOTE: Custom cycle name appears inside the corresponding touch screen button on screens #2 and #15, along top of corresponding in-cycle screens (#9) and on corresponding in-cycle printouts.

Pressing ← or → moves the cursor to the left or right, respectively.

Pressing **RETURN** saves the changed cycle value and returns display to screen #20.

77

CYCLE NAME - PREVAC TYPE

A	B	C	D	E	F	G	H
I	J	K	L	M	N	O	P
Q	R	S	T	U	V	W	X
Y	Z	SPACE				0	1
2	3	4	5	6	7	8	9

←

→

CYCLENAME

RETURN

- Pressing **PURGE TIME** advances display to screen #28. Enter purge time using the numeric keypad. Time appears on display as it is being entered.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #20.

Definition of
Cycle Value

28

CHANGE VALUES - PURGE TIME

SET PURGE TIME

01:00

(Minutes:Seconds)

1	2	3
4	5	6
7	8	9
←	0	→

The purge time is the amount of time spent in the purge phase.

RETURN

- Pressing **PULSES** advances display to screen #29. Enter number of pulses using the numeric keypad. Number appears on display as it is being entered.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #20.

29

CHANGE VALUES - PULSES

SET NUMBER OF PULSES

04

1	2	3
4	5	6
7	8	9
←	0	→

The number of pulses is the total number of vacuum pulses in the cycle.

RETURN

- Pressing **MAX. PRESS.** advances display to screen #31. Enter maximum pressure value using the numeric keypad. Allowable maximum pressure range is 0-45 psig. Pressure value appears on display as it is being entered.

NOTE: If an out-of-range cycle value is entered, a display screen will appear indicating the incorrect value and the allowable range. Display screen will automatically return to previous screen, allowing operator to enter an in-range cycle value.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #20.

31

CHANGE VALUES - MAX. PRESS.

SET MAX. PRESS.

26.0 psig

The max. press. is the pressure level that the charge pulses will reach.

1	2	3
4	5	6
7	8	9
←	0	→

RETURN

- Pressing **MIN. PRESS.** advances display to screen #30. Enter minimum pressure value using the numeric keypad. Allowable minimum pressure range is 0-29.9 inHg. Pressure value appears on display as it is being entered.

NOTE: If an out-of-range cycle value is entered, a display screen will appear indicating the incorrect value and the allowable range. Display screen will automatically return to previous screen, allowing operator to enter an in-range cycle value.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #20.

30

CHANGE VALUES - MIN. PRESS.

SET MIN. PRESS.

10.0 inHg

The min. press. is the pressure level that the vacuum pulses will reach.

1	2	3
4	5	6
7	8	9
←	0	→

RETURN

5. Press **NEXT** button on screen #20. Screen #21 is the second of three menu screens which list the programmable values for the Prevacuum cycle type. To change any of the listed cycle values, press the corresponding button.

NOTE: A definition of each cycle value is given on the corresponding display screen.

Pressing **PREVIOUS** returns display to screen #20.

Pressing **NEXT** advances display to screen #22.

Pressing **MAIN MENU** returns display to screen #1.

21

CHANGE VALUES - 1. PREVAC (PREVAC)

STER. TIME = 4:00
STER. TEMP = 132.0 C
OVERDRIVE = 1.5 C
UNDER TEMP = 1.0 C
OVER TEMP = 6.0 C

PREVIOUS
NEXT
MAIN MENU

Cycle Name
(Cycle Type)

- Pressing **STER. TIME** advances display to screen #32. Enter sterilize time using the numeric keypad. Time appears on display as it is being entered.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing **RETURN** saves the changed cycle value and returns display to screen #21.

32

CHANGE VALUES - STER. TIME

SET STER. TIME
 00:04:00

(Hours:Minutes:Seconds)

The ster. time is
 the minimum time
 spent during the
 sterilize phase.

The actual sterilize
 time may become longer
 because of undertemp
 or overtemp alarms.

1	2	3
4	5	6
7	8	9
←	0	→

RETURN

- Pressing **STER. TEMP** advances display to screen #33. Enter sterilize temperature using the numeric keypad. Allowable sterilize temperature range is 100°-141°C (212°-285°F) for Prevac and Gravity cycles; 100°-125°C (212°-257°F) for Liquid cycle. Temperature appears on display as it is being entered.

NOTE: If an out-of-range cycle value is entered, a display screen will appear indicating the incorrect value and the allowable range. Display screen will automatically return to previous screen, allowing operator to enter an in-range cycle value.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #21.

33

CHANGE VALUES - STER. TEMP

SET STER. TEMP

132.0 C

The sterilize temp.
is the temp. when
the sterilize phase
will start.

1	2	3
4	5	6
7	8	9
←	0	→

RETURN

- Pressing **OVERDRIVE** advances display to screen #34. Enter overdrive temperature using the numeric keypad. Temperature appears on display as it is being entered.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #21.

34

CHANGE VALUES - OVERDRIVE

SET OVERDRIVE

1.5 C

The overdrive plus
the sterilize temp.
is the control temp.
during the sterilize
phase.

1	2	3
4	5	6
7	8	9
←	0	→

RETURN

- Pressing **UNDER TEMP** advances display to screen #35. Enter under temperature value using the numeric keypad. Temperature appears on display as it is being entered.

If an under temperature alarm occurs, cycle operation will hold until the sterilize temperature recovers. Once minimum temperature is reached, sterilize phase may be programmed to either restart or resume at the time when the alarm occurred. Current programmed setting is shown in the display screen, as indicated below:

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #21.

Current
Programmed
Setting

35

CHANGE VALUES - UNDER TEMP

SET UNDER TEMP
1.0 C

The sterilize temp. minus the under temp. is the minimum sterilize temp. before an under temp. alarm occurs.

If the alarm clears, the sterilize time will RESTART.

1	2	3
4	5	6
7	8	9
←	0	→

STERILIZE
TIME RESUME

RETURN

Pressing STERILIZE TIME RESUME will program control to resume the sterilize phase time once the alarm clears.

- Pressing **OVER TEMP** advances display to screen #36. Enter over temperature value using the numeric keypad. Temperature appears on display as it is being entered.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #21.

36

CHANGE VALUES - OVER TEMP

SET OVER TEMP
06.0 C

The over temp. plus the control temp. is the maximum sterilize temp. before an over temp. alarm occurs.

If the alarm clears, the sterilize time will resume.

1	2	3
4	5	6
7	8	9
←	0	→

RETURN

6. Press **NEXT** button on screen #21. Screen #22 is the third of three menu screens which list the programmable values for the Prevacuum cycle type. To change any of the listed cycle values, press the corresponding button.

NOTE: A definition of each cycle value is given on the corresponding display screen.

Pressing **PREVIOUS** returns display to screen #21.

Pressing **CYCLE MENU** returns display to screen #15.

Pressing **MAIN MENU** returns display to screen #1.

Double Door
Units Only

22

CHANGE VALUES - 1. PREVAC (PREVAG)

PRINT INT = 2 min
VACUUM DRY = 10.0 inHg
DRY TIME = 5:00
INTERLOCK = 2

Cycle Name
(Cycle Type)

PREVIOUS

CYCLE
MENU

MAIN
MENU

- Pressing **PRINT INT** advances display to screen #118. Enter print interval using the numeric keypad. Minimum print interval is 1 minute. Time appears on display as it is being entered.

Pressing **←** or **→** on numeric keypad moves the cursor to the left or right, respectively.

Pressing **RETURN** saves the changed cycle value and returns display to screen #22.

118

CHANGE VALUES - PRINT INTERVAL

SET PRINT INTERVAL
02 min

The print interval
is the length of
time between status
prints during the
sterilize phase.

1	2	3
4	5	6
7	8	9
←	0	→

RETURN

- Pressing **VACUUM DRY** advances display to screen #37. Enter vacuum dry value using the numeric keypad. Allowable vacuum dry range is 0-29.9 inHg. Value appears on the display as it is being entered.

NOTE: If an out-of-range cycle value is entered, a display screen will appear indicating the incorrect value and the allowable range. Display screen will automatically return to previous screen, allowing operator to enter an in-range cycle value.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #22.

37

CHANGE VALUES - VACUUM DRY

SET VACUUM DRY

10.0 inHg

The vacuum dry parameter is the vacuum level when the dry time will start.

1	2	3
4	5	6
7	8	9
←	0	→

RETURN

- Pressing **DRY TIME** advances display to screen #38. Enter dry time using the numeric keypad. Time appears on the display as it is being entered.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed cycle value and returns display to screen #22.

38

CHANGE VALUES - DRY TIME

SET DRY TIME

00:05:00

(Hours:Minutes:Seconds)

The dry time is the minimum time spent in the dry phase.

1	2	3
4	5	6
7	8	9
←	0	→

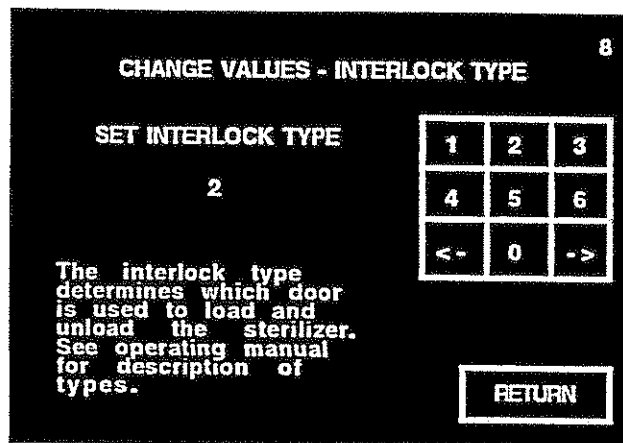
RETURN

- If sterilizer is equipped with double doors, pressing **INTERLOCK** advances display to screen #8. Enter interlock type using the numeric keypad. Interlock type appears on the display as it is being entered.

NOTE: Default interlock type is #2. If different setting is desired, a separate interlock type must be set for each cycle.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

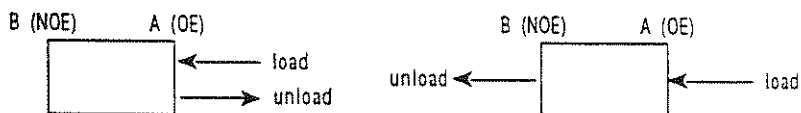
Pressing RETURN saves the changed cycle value and returns display to screen #22.



The following descriptions and illustrations explain each interlock type, #0 through #6. Each door on the illustrations is labeled, "A" or "B", for reference. Door A is located on the same end as the main power disconnect switch. Door B is located on the opposite end.

#0 = No interlocks. Either door can be used to load and unload the sterilizer. Both doors can be open at the same time. At end of cycle, both doors are automatically unsealed.

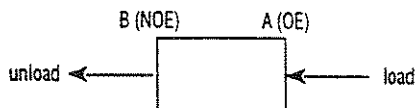
#1 = Door A is designated as the operating end (OE). Sterilizer must be loaded from door A, and can be unloaded from door A or door B. At end of cycle, operator must manually unseal the unload door by pressing the UNSEAL DOOR touch screen button (screen #65) located on the same end as the door.



NOTE: Once the operating end (OE) door is opened, the non-operating end (NOE) door cannot be opened until a complete cycle is run.

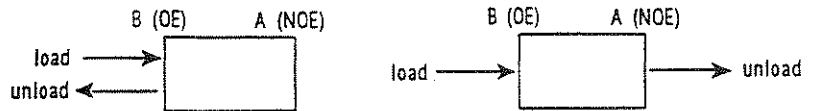
NOTE: A Liquid cycle set to interlock #1 will perform as interlock #2.

#2 = Door A is designated as the operating end (OE). Sterilizer must be loaded from door A and unloaded from door B. At end of cycle, door B is automatically unsealed.



NOTE: Once the operating end (OE) door is opened, the non-operating end (NOE) door cannot be opened until a complete cycle is run.

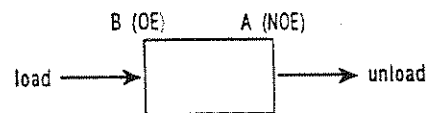
#3 = Door B is designated as the operating end (OE). Sterilizer must be loaded from door B, and can be unloaded from door A or door B. At end of cycle, operator must manually unseal the unload door by pressing UNSEAL DOOR touch screen button (screen #65) located on the same end as the door.



NOTE: Once the operating end (OE) door is opened, the non-operating end (NOE) door cannot be opened until a complete cycle is run.

NOTE: A Liquid cycle set to interlock #3 will perform as interlock #4.

#4 = Door B is designated as the operating end (OE). Sterilizer must be loaded from door B and unloaded from door A. At end of cycle, door A is automatically unsealed.

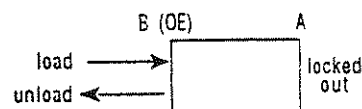


NOTE: Once the operating end (OE) door is opened, the non-operating end (NOE) door cannot be opened until a complete cycle is run.

#5 = Door A is designated as the operating end (OE) door. Sterilizer must be loaded and unloaded from door A; door B is locked out. At end of cycle, door A is automatically unsealed.



#6 = Door B is designated as the operating end (OE) door. Sterilizer must be loaded and unloaded from door B; door A is locked out. At end of cycle, door B is automatically unsealed.



NOTE: Units with generators;

The generator will remain ON in the utility shutdown mode if steam is required to keep a door sealed (interlocks have been set).

7. After all cycle value changes have been made, press **CYCLE MENU** button on screen #22. Display returns to screen #15.

Pressing **PREVIOUS** returns display to screen #21.

Pressing **MAIN MENU** returns display to screen #1.

Double Door
Units Only

22

CHANGE VALUES - 1. PREVAC (PREVAC)

PRINT INT = 2 min
VACUUM DRY = 10.0 inHg
DRY TIME = 5:00
INTERLOCK = 2

PREVIOUS

CYCLE
MENU

MAIN
MENU

8. From screen #15, remaining cycles can be modified if necessary. The procedures for changing other cycle values are similar to the Change Values procedure just outlined.

Once all changes to the cycles and cycle values are completed, press **RETURN**. Display returns to screen #14.

Pressing **MAIN MENU** returns display to screen #1.

15

CYCLE MENU - CHANGE CYCLE VALUES

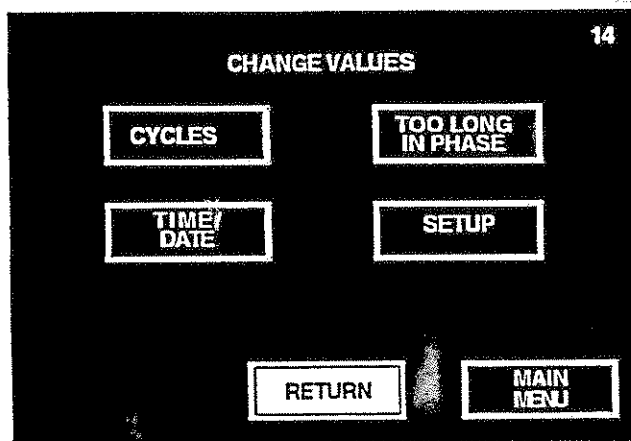
1. <div style="border: 1px solid black; padding: 5px; display: inline-block;">PREVAC</div>	4. <div style="border: 1px solid black; padding: 5px; display: inline-block;">PREVAC</div>
2. <div style="border: 1px solid black; padding: 5px; display: inline-block;">GRAVITY</div>	5. <div style="border: 1px solid black; padding: 5px; display: inline-block;">GRAVITY</div>
3. <div style="border: 1px solid black; padding: 5px; display: inline-block;">LIQUID</div>	6. <div style="border: 1px solid black; padding: 5px; display: inline-block;">LIQUID</div>

RETURN

MAIN
MENU

9. From screen #14, the sterilizer operating parameters (i.e., Too Long In Phase, Time/Date and Setup) can be changed. Refer to Section 8, Programming Operating Parameters, for details.

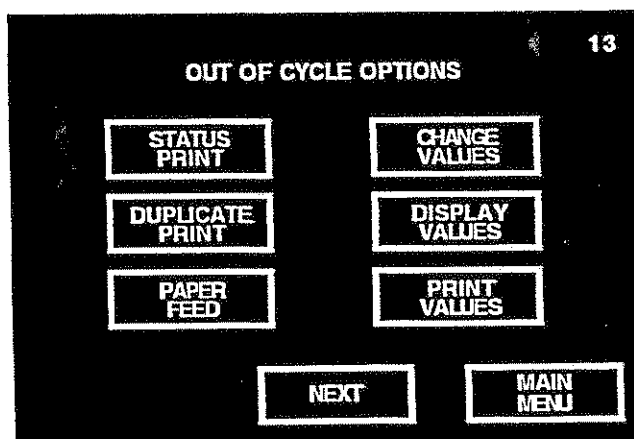
After all changes are completed, press **RETURN** button. Control exits the Change Values option, saving all changes made, and display returns to screen #13.



Pressing MAIN MENU returns display to screen #1.

10. Refer to Section 9, Out of Cycle Options, for information on the other options listed on screen #13.

Press MAIN MENU to return display to main menu (screen #1).



The Eagle Century Series sterilizer is factory programmed with default cycle values and operating parameters. The operating parameters are used to control the general way a sterilizer operates. Sterilizer operating parameters include time/date, too long in phase values and setup values.

NOTE: Control will default to the factory-programmed values if a battery or battery-powered memory failure occurs.

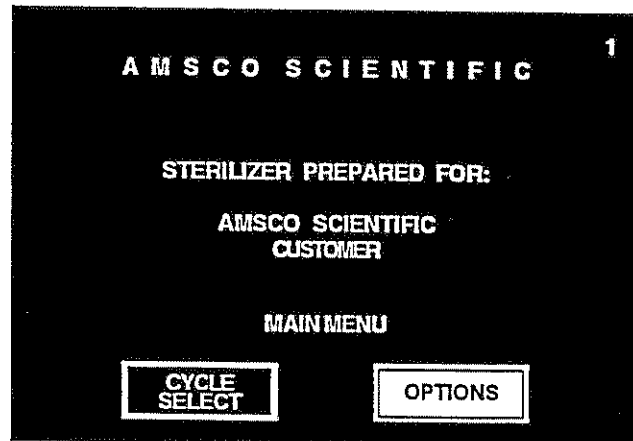
This section outlines how to change the operating parameters only. For details on modifying the default cycle values, refer to Section 7, Programming Cycle Values.

Access Change Values Menu

To modify the preset sterilizer operating parameters, access the Change Values menu (screen #14) as follows:

1. Press **OPTIONS** on screen #1.

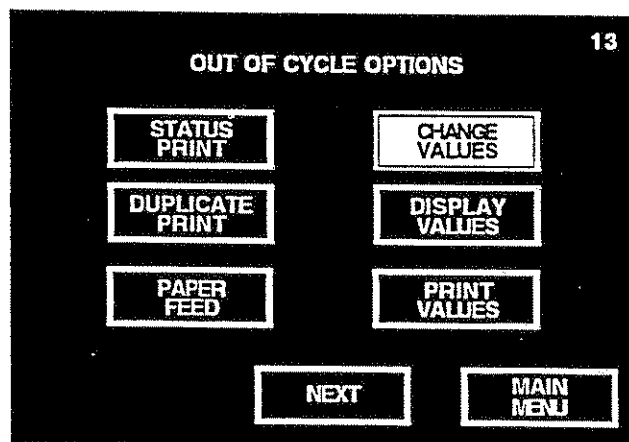
Pressing CYCLE SELECT advances display to the first Cycle Select menu (screen #2).



2. Press **CHANGE VALUES**. Printer records the date and time when Change Values option was selected.

Pressing NEXT advances display to screen #87.

Pressing MAIN MENU returns display to screen #1.

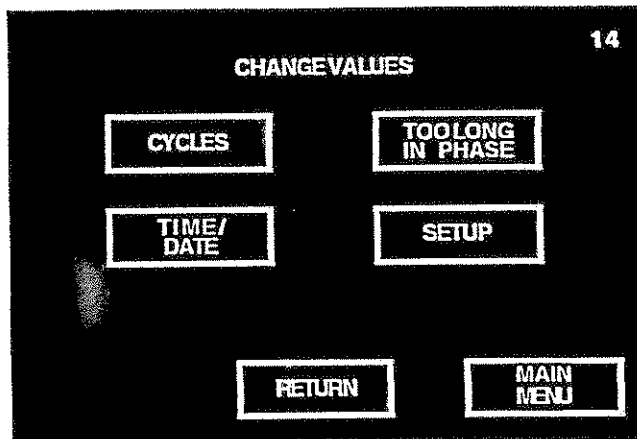


NOTE: If access code feature is activated, an assigned four-digit code must be correctly entered before operator can change parameters. Refer to Section 6, Entering Access Code.

3. Screen #14 allows operator the selection of either changing the cycle values or changing the sterilizer operating parameters.
 - To change cycle values (CYCLES), refer to Section 7, Programming Cycle Values.
 - To change a specific operating parameter (TOO LONG IN PHASE, TIME/DATE or SETUP), refer to the description, included in this section, titled the same as the button on screen #14.

Pressing RETURN returns display to screen #13.

Pressing MAIN MENU returns display to screen #1.



4. To exit Change Values option, press RETURN on screen #14. Control saves all changes made and display returns to screen #13.

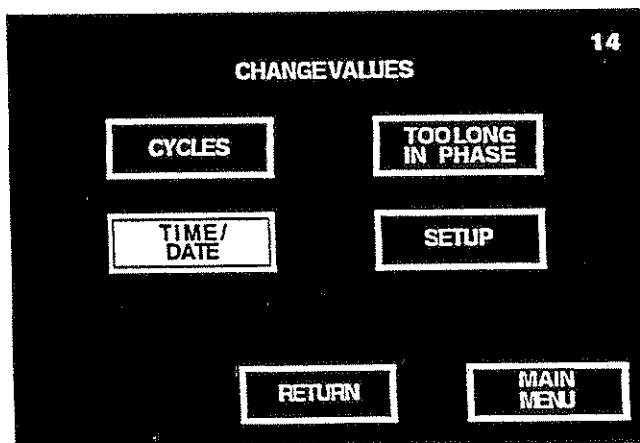
Time/Date

Sterilizer uses the programmed time and date for all printout messages. To adjust time and date:

1. Access Change Values menu (screen #14) as described at the beginning of this section.
2. Press **TIME/DATE**.

Pressing RETURN returns display to screen #13.

Pressing MAIN MENU returns display to screen #1.



3. Press **TIME** button. Enter time using the numeric keypad. Time appears on display as it is being entered. Once time is entered, press AM, PM or MIL to correctly identify the time.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed parameter and returns display to screen #14.

Pressing MAIN MENU returns display to screen #1.

SET TIME AND DATE 39

TIME = 00:00 AM
Hr Mn

DATE = 00/00/00
Mo Da Yr

AM	PM	MIL
1	2	3
4	5	6
7	8	9
←	0	→

RETURN MAIN MENU

4. Press **DATE** button. Enter date using the numeric keypad. Date appears on display as it is being entered.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed parameter and returns display to screen #14.

Pressing MAIN MENU returns display to screen #1.

SET TIME AND DATE 39

TIME = 00:00 AM
Hr Mn

DATE = 00/00/00
Mo Da Yr

AM	PM	MIL
1	2	3
4	5	6
7	8	9
←	0	→

RETURN MAIN MENU

5. Once correct time and date have been entered, press **RETURN** on screen #39. Control saves all changes made, printer records the time and date programmed and display returns to screen #14.

Too Long In Phase

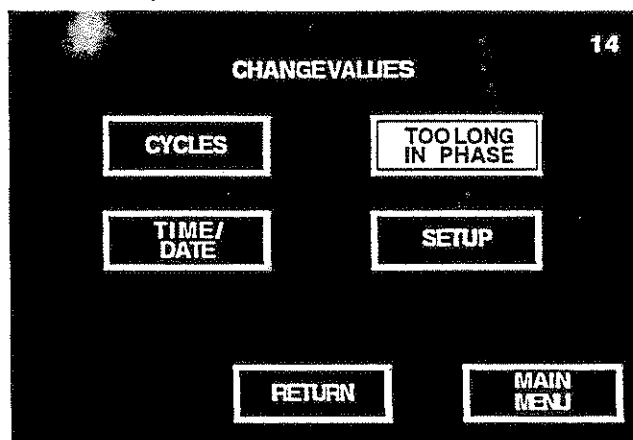
Sterilizer uses the "too long in phase" values to monitor and control the length of the associated cycle phases. Each "too long in phase" value is factory programmed at 30 minutes.

To adjust the "too long in phase" values:

1. Access Change Values menu (screen #14) as described at the beginning of this section.
2. Press **TOO LONG IN PHASE**.

Pressing **RETURN** returns display to screen #13.

Pressing **MAIN MENU** returns display to screen #1.



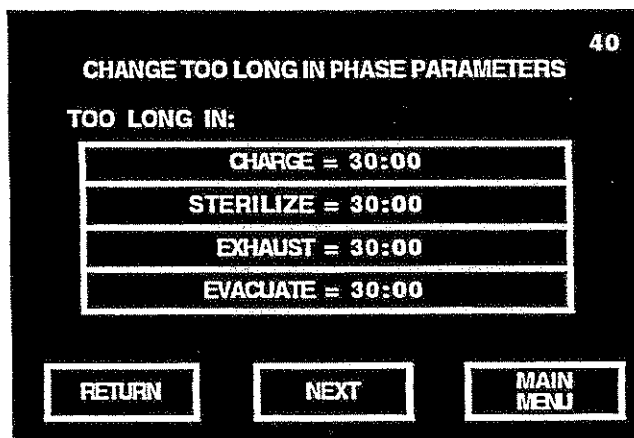
3. Screen #40 is the first of two menu screens which list the phase and its currently set value. To change any of the listed values (parameters), press the corresponding button.

NOTE: A definition of each value (parameter) is given on the corresponding display screen.

Pressing **RETURN** saves all changed parameters and returns display to screen #14.

Pressing **NEXT** advances display to screen #53.

Pressing **MAIN MENU** returns display to screen #1.



- Pressing **CHARGE** advances display to screen #41. Enter charge phase value using the numeric keypad. Value appears on display as it is being entered.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed parameter and returns display to screen #40.

Definition of Parameter

41

CHANGE VALUES - TOO LONG IN CHARGE

SET TOO LONG IN CHARGE
30:00

(Minutes:Seconds)

The too long in charge is the allowable amount of time that the chamber has to reach the set point during charge pulse or charge phase before an alarm occurs.

1	2	3
4	5	6
7	8	9
←	0	→

RETURN

- Pressing **STERILIZE** advances display to screen #52. Enter sterilize phase value using the numeric keypad. Value appears on display as it is being entered.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed parameter and returns display to screen #40.

52

CHANGE VALUES - TOO LONG IN STERILIZE

SET TOO LONG IN STERILIZE
30:00

(Minutes:Seconds)

The too long in sterilize is the allowable amount of time that the sterilize phase may go beyond the set sterilize time. The cycle will then abort.

1	2	3
4	5	6
7	8	9
←	0	→

RETURN

- Pressing **EXHAUST** advances display to screen #42. Enter exhaust phase value using the numeric keypad. Value appears on display as it is being entered.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed parameter and returns display to screen #40.

42

CHANGE VALUES - TOO LONG IN EXHAUST

SET TOO LONG IN EXHAUST
30:00

(Minutes:Seconds)

The too long in exhaust is the allowable amount of time that the chamber has to reach 4 psig before an alarm occurs.

1	2	3
4	5	6
7	8	9
←	0	→

RETURN

- Pressing **VACUUM** advances display to screen #43. Enter evacuate phase value using the numeric keypad. Value appears on display as it is being entered.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing **RETURN** saves the changed parameter and returns display to screen #40.

43

CHANGE VALUES - TOO LONG IN EVACUATE

SET TOO LONG IN EVACUATE
30:00

(Minutes:Seconds)

The too long in vacuum is the allowable amount of time that the chamber has to reach the set vacuum level before an alarm occurs.

1	2	3
4	5	6
7	8	9
←	0	→

RETURN

- Press **NEXT** button on screen #40. Screen #53 is the second of two menu screens which list the phase and its currently set value. To change any of the listed values, press the corresponding button.

NOTE: A definition of each value (parameter) is given on the corresponding display screen.

Pressing **PREVIOUS** returns display to screen #40.

Pressing **RETURN** saves all changed parameters and returns display to screen #14.

Pressing **MAIN MENU** returns display to screen #1.

53

CHANGE TOO LONG IN PHASE PARAMETERS

TOO LONG IN:

AIR BREAK = 30:00
DOORSEAL = 30:00
DOORUNSEAL = 30:00
JACKET CHARGE = 30:00

PREVIOUS

RETURN

MAIN MENU

- Pressing **AIR BREAK** advances display to screen #44. Enter air break phase value using the numeric keypad. Value appears on display as it is being entered.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing **RETURN** saves the changed parameter and returns display to screen #53.

44

CHANGE VALUES - TOO LONG IN AIR BREAK

SET TOO LONG IN AIR BREAK
30:00

(Minutes:Seconds)

The too long in air break is the allowable amount of time that the chamber has to reach 2 inHg before an alarm occurs.

1	2	3
4	5	6
7	8	9
←	0	→

RETURN

- Pressing **DOOR SEAL** advances display to screen #54. Enter door seal phase value using the numeric keypad. Value appears on display as it is being entered.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed parameter and returns display to screen #53.

54

CHANGE VALUES - TOO LONG IN DOOR SEAL

SET TOO LONG IN DOORSEAL
30:00

(Minutes:Seconds)

The too long in door seal is the allowable amount of time that the door has to seal before an alarm occurs.

1	2	3
4	5	6
7	8	9
←	0	→

RETURN

- Pressing **DOOR UNSEAL** advances display to screen #55. Enter door unseal phase value using the numeric keypad. Value appears on display as it is being entered.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed parameter and returns display to screen #53.

55

CHANGE VALUES - TOO LONG IN DOOR UNSEAL

SET TOO LONG IN DOORUNSEAL
30:00

(Minutes:Seconds)

The too long in door unseal is the allowable amount of time that the door has to unseal before an alarm occurs.

1	2	3
4	5	6
7	8	9
←	0	→

RETURN

- Pressing **JACKET CHARGE** advances display to screen #59. Enter jacket charge phase value using the numeric keypad. Value appears on display as it is being entered.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed parameter and returns display to screen #53.

59

CHANGE VALUES - TOO LONG IN JACKET CHARGE

SET TOO LONG IN JACKETCHARGE
30:00

(Minutes:Seconds)

The too long in jacket charge is the allowable amount of time that the jacket has to charge to the set point before an alarm occurs.

1	2	3
4	5	6
7	8	9
←	0	→

RETURN

5. Once the correct "too long in phase" values have been entered, press **RETURN** on screen #53. Control saves all changes made and display returns to screen #14.

Pressing **PREVIOUS** returns display to screen #40.

Pressing **MAIN MENU** returns display to screen #1.

CHANGE TOO LONG IN PHASE PARAMETERS	
TOO LONG IN:	
AIR BREAK	= 30:00
DOORSEAL	= 30:00
DOORUNSEAL	= 30:00
JACKET CHARGE	= 30:00

PREVIOUS RETURN MAIN MENU

Setup

Sterilizer uses the setup options to assign the temperature and pressure units, control volume of audible signals, control utilities sterilizer shutdown feature and control printer functions.

1. Access Change Values menu (screen #14) as described at the beginning of this section.
2. Press **SETUP**.

Pressing **RETURN** returns display to screen #13.

Pressing **MAIN MENU** returns display to screen #1.

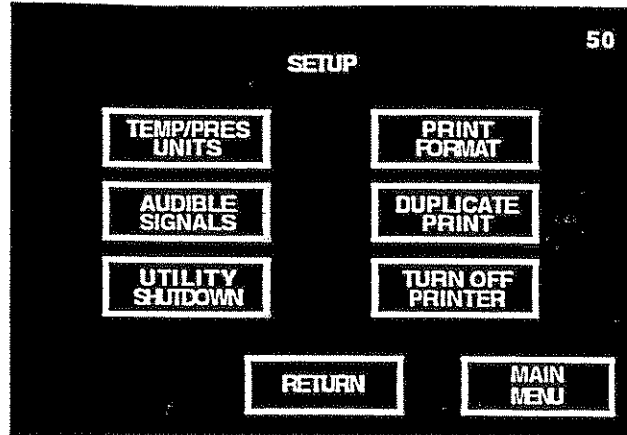
CHANGEVALUES	
CYCLES	TOO LONG IN PHASE
TIME/DATE	SETUP

RETURN MAIN MENU

- Screen #50 lists six setup options. To change a specific setup option, refer to the following description titled the same as the button on screen #50.

Pressing RETURN saves all changed setup values and returns display to screen #14.

Pressing MAIN MENU returns display to screen #1.



- To exit Setup option, press RETURN on screen #50. Control saves all changes made and display returns to Change Values menu (screen #14).

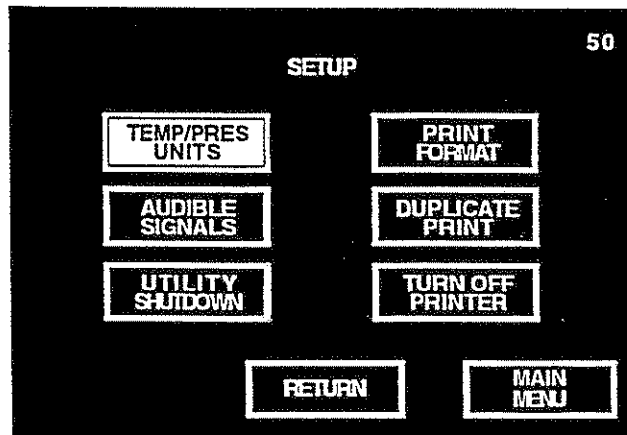
» Temp/Pres Units

This setup option allows operator to select the temperature and pressure units that the control will use for all display and printout messages. Default pressure unit is psig/inHg; default temperature unit is degrees Celsius (°C).

- Press **TEMP/PRES UNITS** on screen #50.

Pressing RETURN returns display to screen #14.

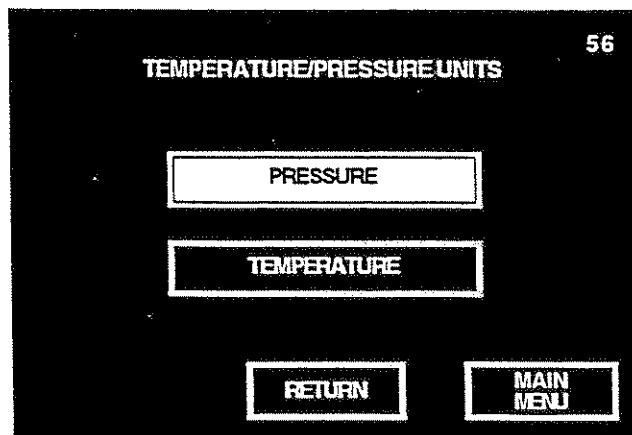
Pressing MAIN MENU returns display to screen #1.



- To change the programmed pressure unit, press **PRESSURE** button.

Pressing RETURN returns display to screen #50.

Pressing MAIN MENU returns display to screen #1.



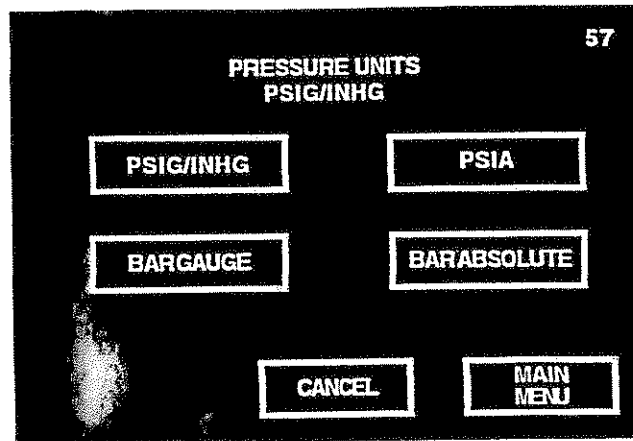
3. Select the desired pressure unit by pressing the appropriate button. Current unit setting appears under the screen title.

Display automatically returns to screen #56 once a pressure unit is selected.

NOTE: Recalibration is not required if pressure unit is changed.

Pressing **CANCEL** returns display to screen #56 without changing the current setting.

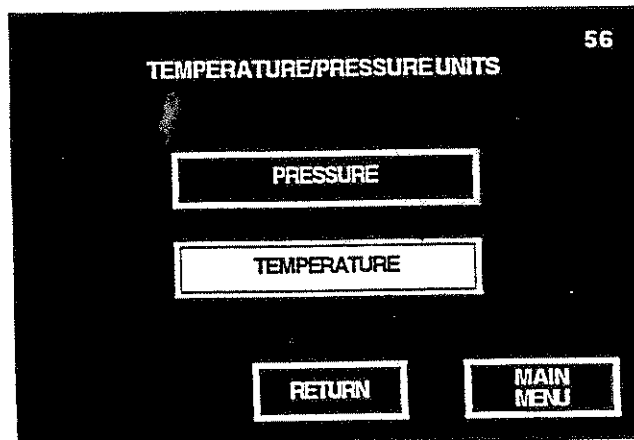
Pressing **MAIN MENU** returns display to screen #1.



4. To change the programmed temperature unit, press **TEMPERATURE** button.

Pressing **RETURN** returns display to screen #50.

Pressing **MAIN MENU** returns display to screen #1.



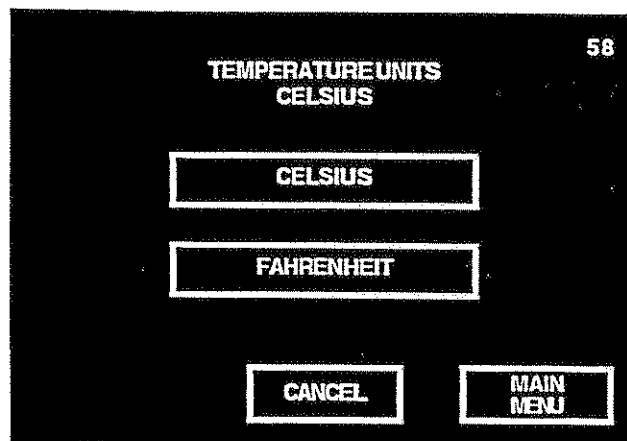
5. Select the desired temperature unit by pressing the appropriate button. Current unit setting appears under the screen title.

Display automatically returns to screen #56 once a temperature unit is selected.

NOTE: Recalibration is not required if temperature unit is changed.

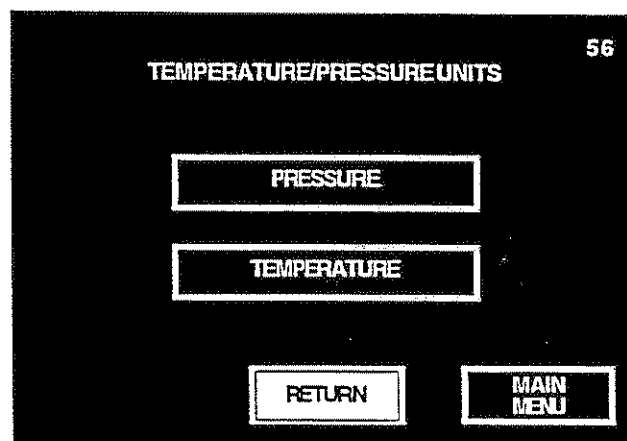
Pressing CANCEL returns display to screen #56 without changing the current setting.

Pressing MAIN MENU returns display to screen #1.



6. Once pressure and temperature units have been selected, press **RETURN** on screen #56. Control saves all changes made and display returns to screen #50.

Pressing MAIN MENU returns display to screen #1.



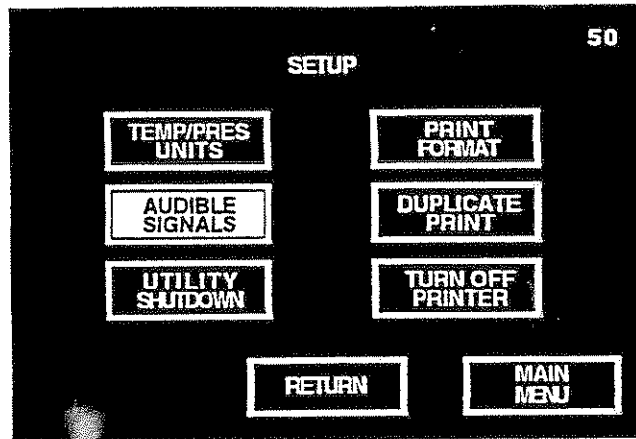
» Audible Signals

This setup option allows adjustment of the audible signal tones sounded by the control. Three signals can be adjusted and each signal can be independently adjusted to one of three volume levels or turned off.

1. Press **AUDIBLE SIGNALS** on screen #50.

Pressing **RETURN** returns display to screen #14.

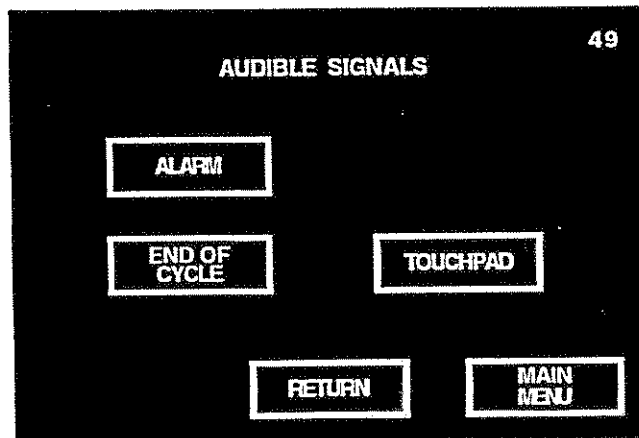
Pressing **MAIN MENU** returns display to screen #1.



2. Select the signal to be changed by pressing the appropriate button.
 - **ALARM** - tone sounded during abnormal (alarm) conditions.
 - **END OF CYCLE** - tone sounded when cycle operation is complete.
 - **TOUCHPAD** - tone sounded whenever a touch screen button is pressed.

Pressing **RETURN** saves all changed settings and returns display to screen #50.

Pressing **MAIN MENU** returns display to screen #1.

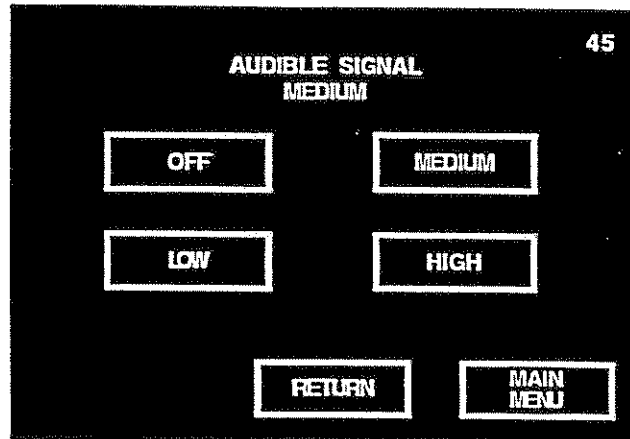


3. To stop the signal tone from sounding, press **OFF**. To select the desired volume level, press the corresponding button (**LOW**, **MEDIUM** or **HIGH**). Current volume setting appears under the screen title.

NOTE: Alarm signal tone cannot be turned off.

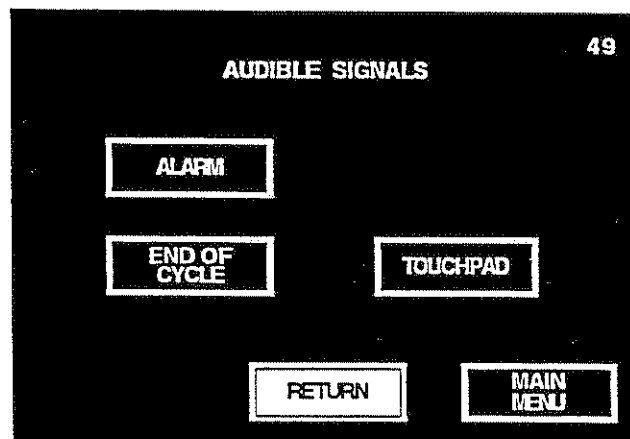
Once signal tone is selected, press **RETURN** to return display to screen #49.

Pressing MAIN MENU returns display to screen #1.



4. Once all signals have been adjusted, press **RETURN** on screen #49. Control saves all changes made and display returns to screen #50.

Pressing MAIN MENU returns display to screen #1.



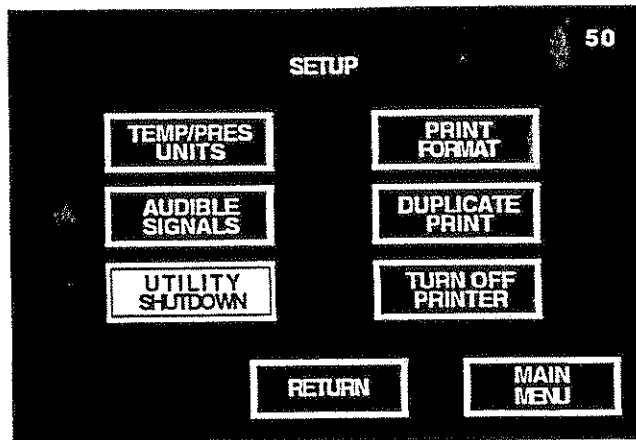
» Utility Shutdown

Utility shutdown feature is used to automatically control the utility services to the sterilizer. The sterilizer can be programmed to automatically shut off and restart its steam and water supplies at any time during the day, conserving utilities.

1. Press **UTILITY SHUTDOWN** on screen #50.

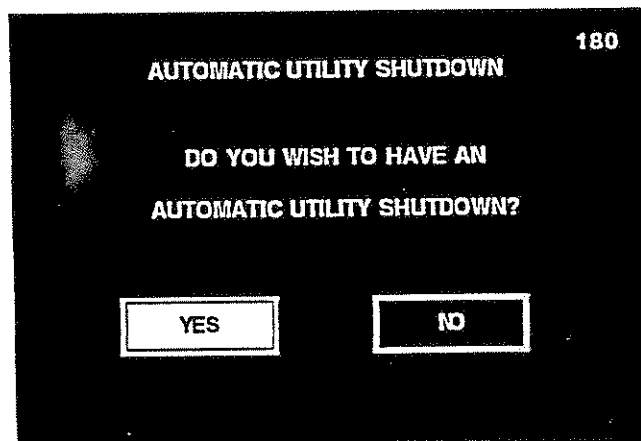
Pressing RETURN returns display to screen #14.

Pressing MAIN MENU returns display to screen #1.



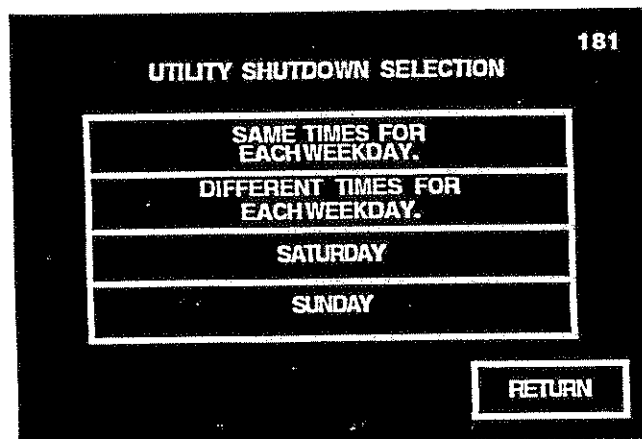
2. Press **YES** to select the utility shutdown option.

Pressing NO refuses the utility shutdown option and returns display to screen #50.



3. Screen #181 allows operator to select when the utility shutdown period will occur. To program a utility shutdown period, refer to the following description titled the same as the button on screen #181.

Pressing RETURN saves the changed values and returns display to screen #50.



4. Once all utility shutdown periods are entered, press RETURN on screen #181. Control saves all changes made and display returns to screen #50.

Same Times For Each Weekday (Monday - Friday)

1. Press **SAME TIMES FOR EACH WEEKDAY** on screen #181.

Pressing RETURN returns display to screen #50.

181

UTILITY SHUTDOWN SELECTION

SAME TIMES FOR EACH WEEKDAY.
DIFFERENT TIMES FOR EACH WEEKDAY.
SATURDAY
SUNDAY

RETURN

2. Press **SHUTDOWN TIME** button. Enter shutdown time using the numeric keypad. Time appears on display as it is being entered. Once time is entered, press AM, PM or MIL to correctly identify the time.

NOTE: If the sterilizer is running a cycle when the programmed utility shutdown time occurs, the sterilizer completes the cycle before shutting off its utilities. The sterilizer can be manually restarted at any time during the utility shutdown period by pressing the EAGLE on screen #0.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed value and returns display to screen #181.

182

SET SHUTDOWN/RESTART TIMES

SHUTDOWN TIME 00:00:00 PM	AM	PM	MIL
	1	2	3
	4	5	6
	7	8	9
	←	0	→

**RESTART TIME
00:00:00 AM**

RETURN

3. Press **RESTART TIME** button. Enter restart time using the numeric keypad. Time appears on display as it is being entered. Once time is entered, press AM, PM or MIL to correctly identify the time.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed value and returns display to screen #181.

182

SET SHUTDOWN/RESTART TIMES

SHUTDOWN TIME
00:00:00 PM

RESTART TIME
00:00:00 AM

AM	PM	MIL
1	2	3
4	5	6
7	8	9
←	0	→

RETURN

4. Once correct times are entered, press **RETURN** on screen #182. Control saves the changed values and display returns to screen #181.

Different Times For Each Weekday (Monday - Friday)

1. Press **DIFFERENT TIMES FOR EACH WEEKDAY** on screen #181.

Pressing RETURN returns display to screen #50.

181

UTILITY SHUTDOWN SELECTION

SAME TIMES FOR EACH WEEKDAY.

DIFFERENT TIMES FOR EACH WEEKDAY.

SATURDAY

SUNDAY

RETURN

- Screen #184 allows operator to program a different shutdown period for each week day listed. Press the **week day** button corresponding with the day to be changed.

Pressing **RETURN** returns display to screen #181.

184

WEEKDAY UTILITY SHUTDOWN TIMES

MONDAY

TUESDAY

WEDNESDAY

THURSDAY

FRIDAY

RETURN

- Press **SHUTDOWN TIME** button. Enter shutdown time using the numeric keypad. Time appears on display as it is being entered. Once time is entered, press AM, PM or MIL to correctly identify the time.

NOTE: If the sterilizer is running a cycle when the programmed utility shutdown time occurs, the sterilizer completes the cycle before shutting off its utilities. The sterilizer can be manually restarted at any time during the utility shutdown period by pressing **EAGLE** on screen #0.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing **RETURN** saves the changed value and returns display to screen #184.

182

SET SHUTDOWN/RESTART TIMES

SHUTDOWN TIME
00:00:00 PM

RESTART TIME
00:00:00 AM

AM	PM	MIL
1	2	3
4	5	6
7	8	9
←	0	→

RETURN

4. Press **RESTART TIME** button. Enter restart time using the numeric keypad. Time appears on display as it is being entered. Once time is entered, press AM, PM or MIL to correctly identify the time.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respective

*Pressing **RETURN** saves the changed value and returns display to screen #184.*

SET SHUTDOWN/RESTART TIMES 182

SHUTDOWN TIME 00:00:00 PM	
RESTART TIME 00:00:00 AM	

AM	PM	MIL
1	2	3
4	5	6
7	8	9
←	0	→

RETURN

5. Once correct times are entered for the selected week day, press **RETURN** on screen #182. Control saves the changed values and returns display to screen #184, allowing operator to program times for another week day.
6. Once shutdown periods are entered for each week day, press **RETURN** on screen #184. Display returns to screen #181.

*Pressing **RETURN** returns display to screen #181.*

WEEKDAY UTILITY SHUTDOWN TIMES 184

MONDAY	THURSDAY
TUESDAY	FRIDAY
WEDNESDAY	

RETURN

Saturday or Sunday

1. Press **SATURDAY** or **SUNDAY** on screen #181.

Pressing **RETURN** returns display to screen #50.

181

UTILITY SHUTDOWN SELECTION

SAME TIMES FOR EACH WEEKDAY.
DIFFERENT TIMES FOR EACH WEEKDAY.
SATURDAY
SUNDAY

RETURN

2. Press **SHUTDOWN TIME** button. Enter shutdown time using the numeric keypad. Time appears on display as it is being entered. Once time is entered, press AM, PM or MIL to correctly identify the time.

NOTE: If the sterilizer is running a cycle when the programmed utility shutdown time occurs, the sterilizer completes the cycle before shutting off its utilities. The sterilizer can be manually restarted at any time during the utility shutdown period by pressing **CANCEL SHUTDOWN** on screen #183.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing **RETURN** saves the changed value and returns display to screen #184.

182

SET SHUTDOWN/RESTART TIMES

SHUTDOWN TIME
 00:00:00 PM

RESTART TIME
 00:00:00 AM

AM	PM	MIL
1	2	3
4	5	6
7	8	9
←	0	→

RETURN

3. Press **RESTART TIME** button. Enter restart time using the numeric keypad. Time appears on display as it is being entered. Once time is entered, press AM, PM or MIL to correctly identify the time.

Pressing ← or → on numeric keypad moves the cursor to the left or right, respectively.

Pressing RETURN saves the changed value and returns display to screen #184.

SET SHUTDOWN/RESTART TIMES 182

AM	PM	MIL
1	2	3
4	5	6
7	8	9
←	0	→

SHUTDOWN TIME 00:00:00 PM

RESTART TIME 00:00:00 AM

RETURN

4. Once correct times are entered, press **RETURN** on screen #182. Control saves the changed values and display returns to screen #181.

» **Print Format** This setup option allows selection of the format in which the cycle data will be printed during cycle operation.

1. Press **PRINT FORMAT** on screen #50.

Pressing RETURN returns display to screen #14.

Pressing MAIN MENU returns display to screen #1.

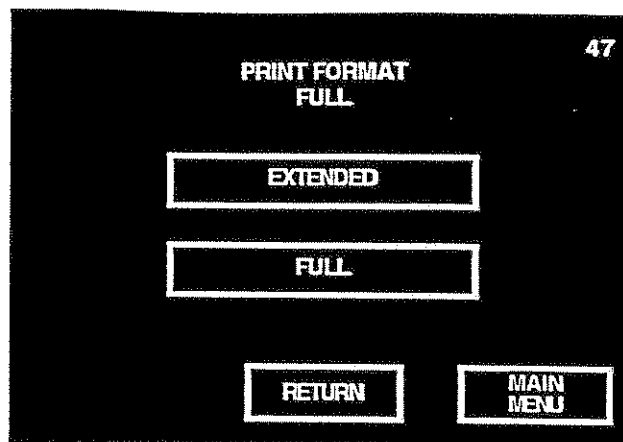
SETUP 50

TEMP/PRES UNITS	PRINT FORMAT
AUDIBLE SIGNALS	DUPLICATE PRINT
UTILITY SHUTDOWN	TURN OFF PRINTER
RETURN	MAIN MENU

2. Select desired print format by pressing the appropriate button. Current format setting appears under the screen title.

Pressing **RETURN** saves the changed setting and returns display to screen #50.

Pressing **MAIN MENU** returns display to screen #1.



PURGE		
Time of Day	11:48:24A	
Chamber Press	0.3	psig
Chamber Temp	66.7	C
STERILIZE		
Time of Day	11:49:43A	
Chamber Press	16.6	psig
Chamber Temp	121.2	C

Figure 8-1. Example of Extended Print Format

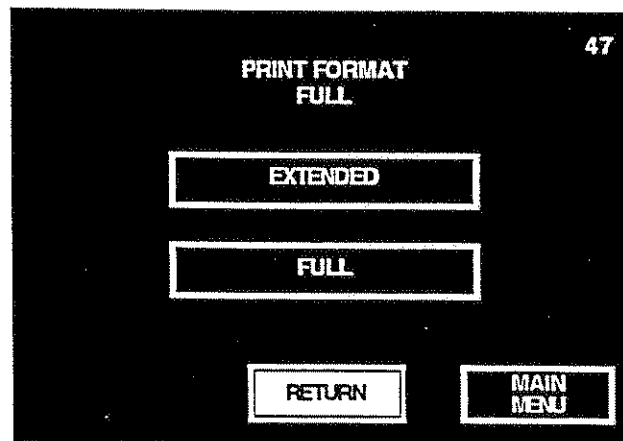
	TIME	T=C	V=inHg P=psig
C	11:48:24A	66.7	0.3V
C	11:49:24A	112.7	10.0P
S	11:49:43A	121.2	16.6P
S	11:51:43A	122.6	17.7P
S	11:53:43A	123.3	17.8P
S	11:55:43A	122.6	16.7P

Figure 8-2. Example of Full Print Format

- Pressing **EXTENDED** provides an expanded printout, listing phase name, time, chamber pressure and chamber temperature in an easy-to-read format (see Figure 8-1). Printout is generated at each transition point during the cycle and at set interval points during the sterilize phase.

NOTE: Interval points are determined by the Print Interval, programmed for each cycle. Refer to Section 7, Programming Cycle Values, for programming the Print Interval.

- Pressing **FULL** provides a one-line printout, listing phase code, time, chamber temperature and chamber pressure in an abbreviated format (see Figure 8-2). Printout is generated at each transition point during the cycle and at set interval points during the sterilize phase. This abbreviated version of the cycle printout reduces paper usage.
3. Once print format is selected, press **RETURN** on screen #47. Control saves the changed value and display returns to screen #50.



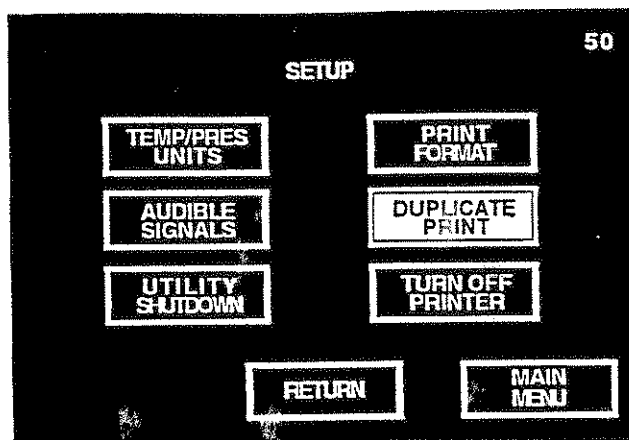
» Duplicate Print

The Duplicate Print feature is used to automatically furnish an additional printout at the end of each cycle.

1. Press **DUPLICATE PRINT** on screen #50.

Pressing RETURN returns display to screen #14.

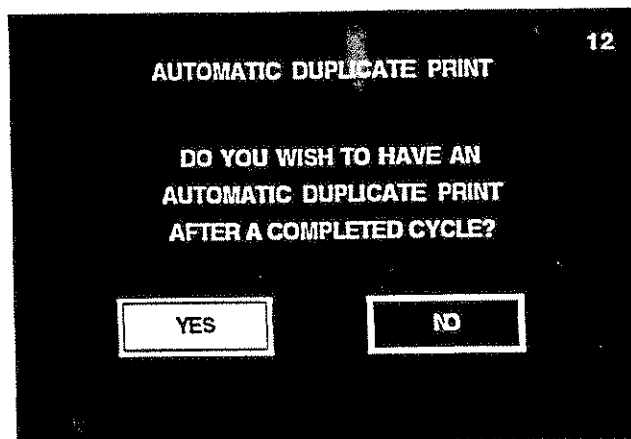
Pressing MAIN MENU returns display to screen #1.



2. Press **YES** to automatically generate a complete duplicate printout on completion of each cycle. The duplicate printout provides the cycle data in the same format as the in-cycle printout. First line of the additional printout will always read "- DUPLICATE PRINT-".

Display automatically returns to screen #50 once a selection is made.

Pressing NO refuses the duplicate printout option and returns display to screen #50. Printer will still generate an in-cycle printout as programmed.



» **Turn Off Printer** This setup option is used to turn off all printer operations.

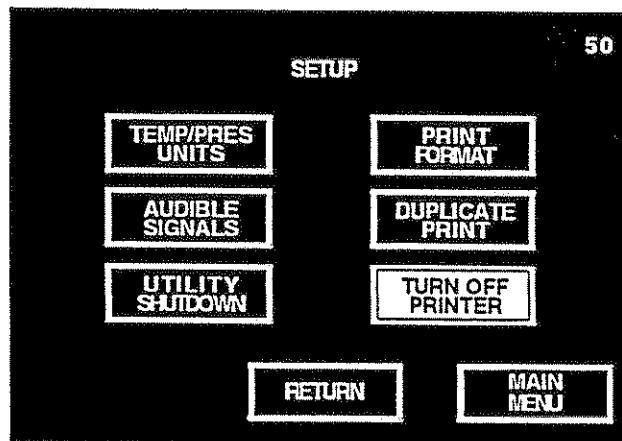
Press **TURN OFF PRINTER** on screen #50 to turn off all automatic and manual printer operations. Printer records the time and date when Turn Off Printer was selected.

Printer must be turned on in order to operate any printer functions.

NOTE: Printer should be turned on if cycle records are necessary.

Pressing RETURN saves the changed setup value and returns display to screen #14.

Pressing MAIN MENU returns display to screen #1.



NOTE: If printer is currently turned off, the touch screen button will read TURN ON PRINTER. Pressing this button will turn on the printer and record the time and date when Turn On Printer was selected.

6

100

100

100

100

OUT OF CYCLE OPTIONS

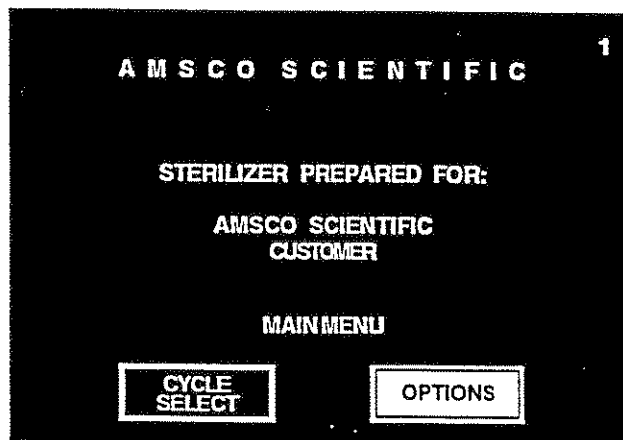
9

This section describes each out-of-cycle function accessible from the Out of Cycle Option menu screens.

General

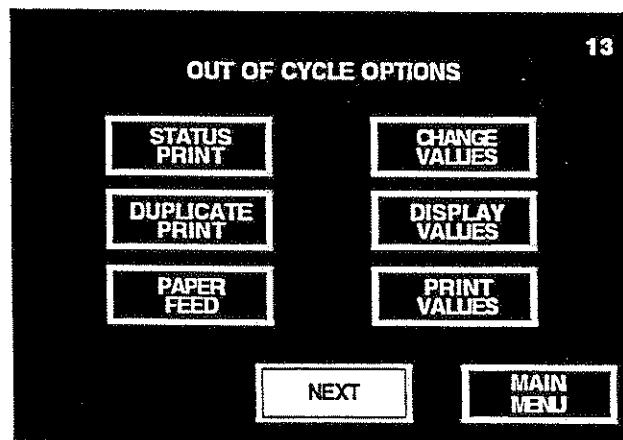
As previously discussed in Section 4, Control Interface, pressing **OPTIONS** on screen #1 advances display to the first of two Out of Cycle Options menu screens.

Pressing **CYCLE SELECT** advances display to the first Cycle Select menu (screen #2).



Screen #13 lists six functions that can be performed when the sterilizer is not running a cycle. To access any of the listed functions, refer to the description, included in this section, titled the same as the button on screen #13.

Pressing **MAIN MENU** returns display to screen #1.

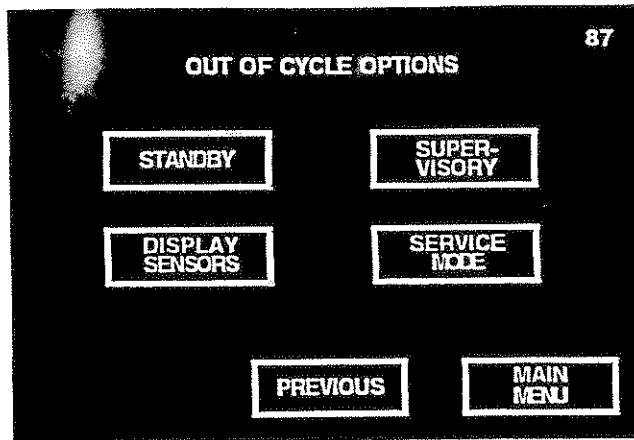


Pressing **NEXT** on screen #13 advances display to the second Out of Cycle Options menu screen.

Screen #87 lists the remaining out-of-cycle functions. To access any of the listed functions, refer to the description, included in this section, titled the same as the button on screen #87.

Pressing **PREVIOUS** returns display to screen #13.

Pressing **MAIN MENU** returns display to screen #1.



To exit the option menu screens, press **MAIN MENU** on screen #13 or #87. Display returns to the main menu (screen #1).

Status Print

Status Print is used, when the sterilizer is out of cycle, to generate a printed record of the current chamber status.

Press **STATUS PRINT** on screen #13 to automatically generate a printout listing the current temperature and pressure in the sterilizer chamber at the time the button was pressed (see Figure 9-1).

Pressing **NEXT** advances display to screen #87.

Pressing **MAIN MENU** returns display to screen #1.

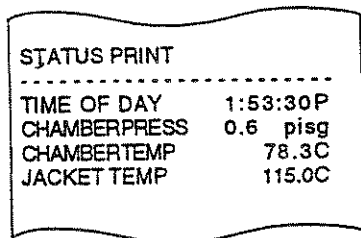
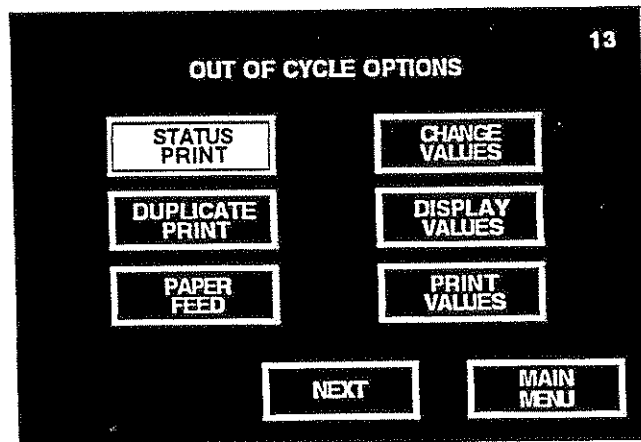


Figure 9-1. Example of Out-of-cycle Status Printout



Duplicate Print

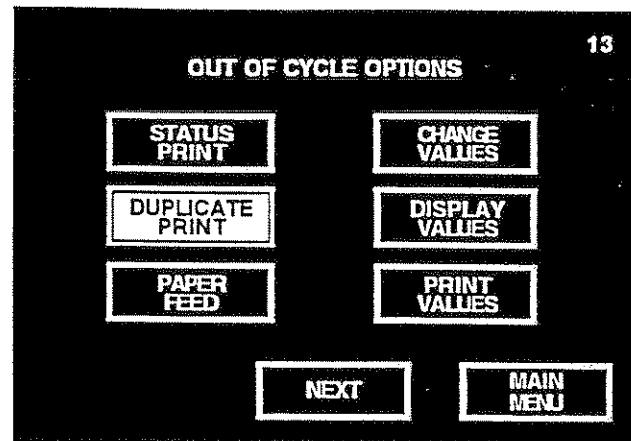
Duplicate Print is used to instantaneously generate a duplicate printed record of the last completed cycle.

Press **DUPLICATE PRINT** on screen #13 to automatically generate a printout listing all data from the last completed cycle.

NOTE: If sterilizer was just initialized, no data will be printed.

Pressing NEXT advances display to screen #87.

Pressing MAIN MENU returns display to screen #1.



Paper Feed

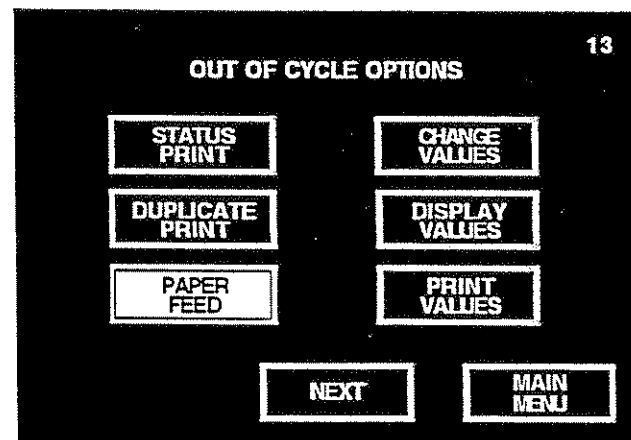
Paper Feed is used to manually advance the printer paper.

Press **PAPER FEED** on screen #13 to automatically advance the printer paper up by one line.

To continually advance printer paper, press and hold **PAPER FEED**. Paper will continually advance until button is released.

Pressing NEXT advances display to screen #87.

Pressing MAIN MENU returns display to screen #1.



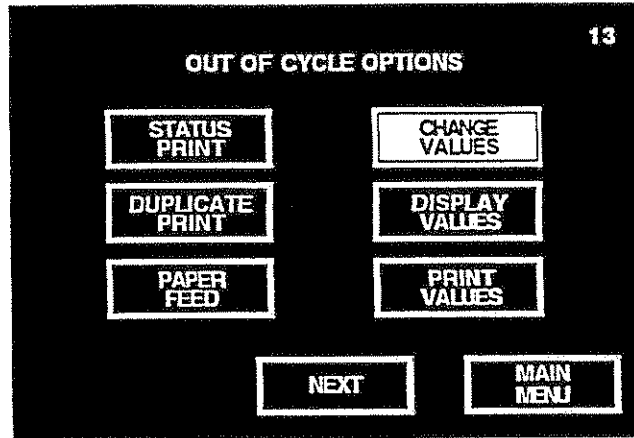
Change Values

Change Values allows access to the Change Values menu (screen #14). Operator may program the cycle values and sterilizer operating parameters from this menu screen.

Press **CHANGE VALUES** on screen #13 to advance display to the Change Values menu (screen #14). Refer to Section 7, Programming Cycle Values, and Section 8, Programming Operating Parameters, for information on using the Change Values option.

Pressing **NEXT** advances display to screen #87.

Pressing **MAIN MENU** returns display to screen #1.



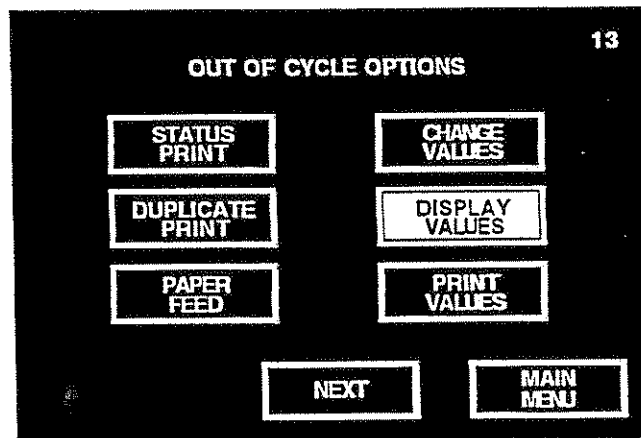
Display Values

Display Values is used to view the current programmed cycle values and sterilizer operating parameters.

1. Press **DISPLAY VALUES** on screen #13.

Pressing **NEXT** advances display to screen #87.

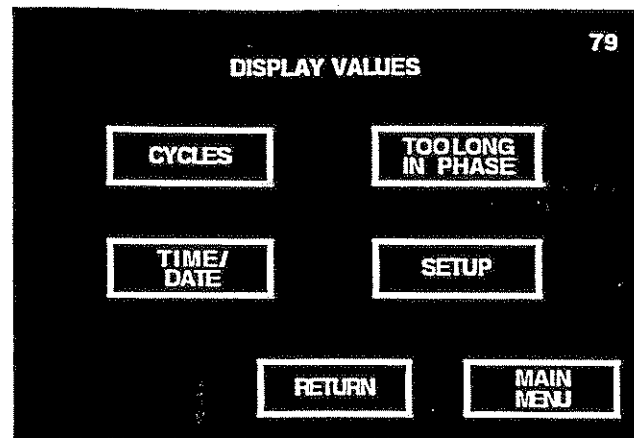
Pressing **MAIN MENU** returns display to screen #1.



2. Screen #79 allows operator the selection of viewing any cycle value or operating parameter currently programmed. To view a specific value, refer to the following description titled the same as the button on screen #79.

Pressing RETURN returns display to screen #13.

Pressing MAIN MENU returns display to screen #1.



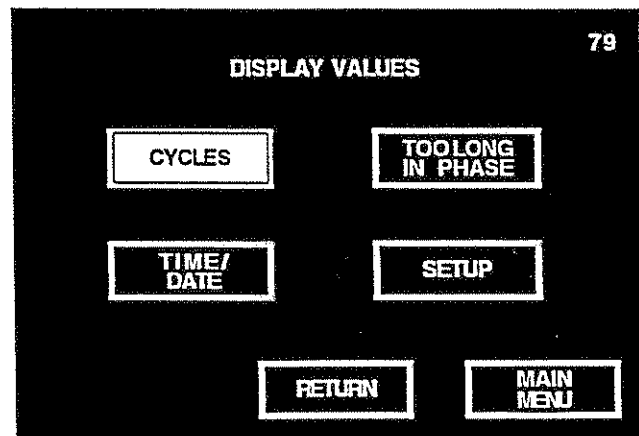
3. To exit the Display Values option, press RETURN on screen #79. Display returns to the first Out of Cycle Options menu (screen #13).

» **Cycles** To view the values currently programmed for a particular cycle:

1. Press **CYCLES** on screen #79.

Pressing RETURN returns display to screen #13.

Pressing MAIN MENU returns display to screen #1.

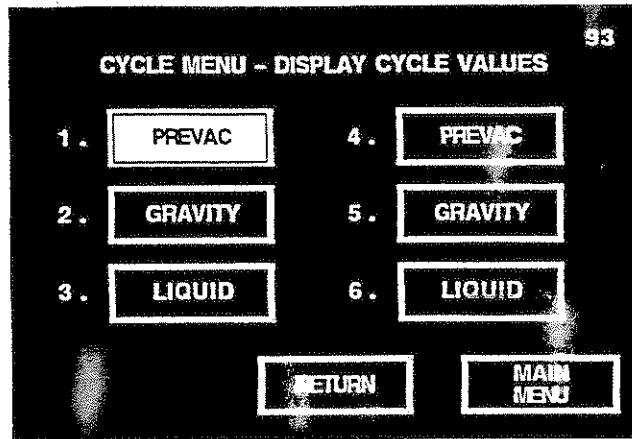


2. Press **cycle button** corresponding to the cycle and cycle values you wish to view.

For example, press 1. PREVAC to view the cycle values programmed for the first cycle.

Pressing **RETURN** returns display to screen #79.

Pressing **MAIN MENU** returns display to screen #1.



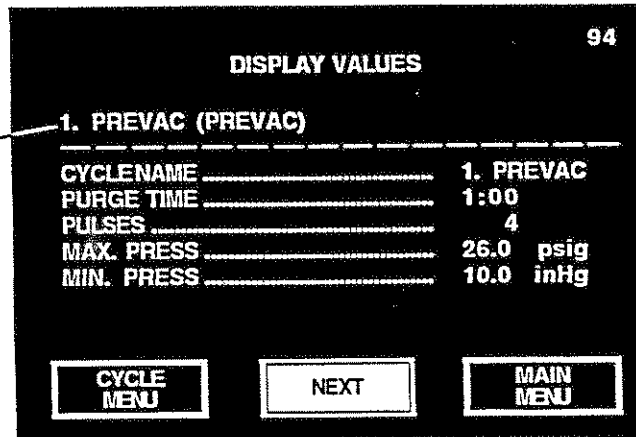
3. The first values screen appears listing some of the current cycle values programmed for the selected cycle.

Press **NEXT** to view more programmed values for the selected cycle.

Pressing **CYCLE MENU** returns display to screen #93.

Pressing **MAIN MENU** returns display to screen #1.

Cycle Name
(Cycle Type)



- The second values screen appears listing more cycle values programmed for the selected cycle.

If applicable, press **NEXT** to view remaining programmed values for the selected cycle.

NOTE: Depending on cycle selected, there are either two or three values screens showing the programmed cycle values.

Pressing **PREVIOUS** returns display to first values screen shown.

Pressing **MAIN MENU** returns display to screen #1.

Cycle Name
(Cycle Type)

97

DISPLAY VALUES

1. PREVAC (PREVAC)

STER. TIME	4:00
STER. TEMP	132.0 C
OVERDRIVE	1.5 C
UNDERTEMP	1.0 C
UNDERTEMP	RESTART
OVERTEMP	6.0 C
PRINT INT	2 min

PREVIOUS

NEXT

MAIN MENU

- The last values screen appears listing the remaining cycle values programmed for the selected cycle.

After viewing the cycle values, press **CYCLE MENU** on the last values screen. Display returns to screen #93.

Pressing **PREVIOUS** returns display to second values screen shown.

Pressing **MAIN MENU** returns display to screen #1.

Cycle Name
(Cycle Type)

Double Door
Units Only

98

DISPLAY VALUES

1. PREVAC (PREVAC)

VACUUM DRY	10.0 inHg
DRY TIME	30:00
INTERLOCK	2

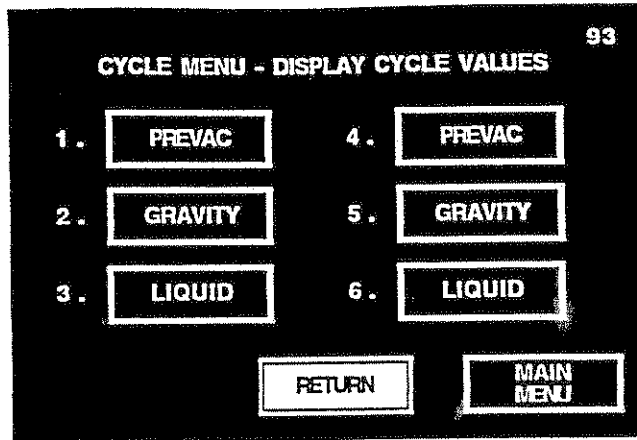
PREVIOUS

CYCLE MENU

MAIN MENU

6. To exit the Cycle Menu, press **RETURN** on screen #93. Display returns to the Display Values menu (screen #79).

Pressing **MAIN MENU** returns display to screen #1.

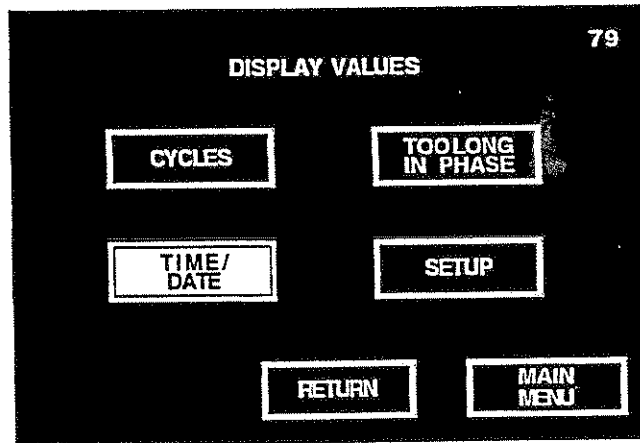


» **Time/Date** To view the current programmed time and date:

1. Press **TIME/DATE** on screen #79.

Pressing **RETURN** returns display to screen #13.

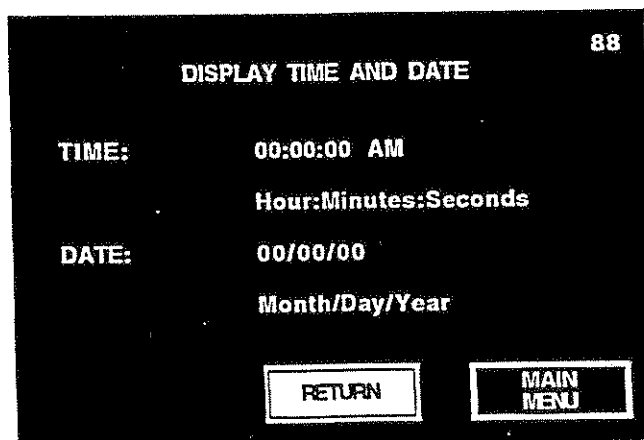
Pressing **MAIN MENU** returns display to screen #1.



2. Screen #88 lists the current time and date programmed in the sterilizer control at the moment the TIME/DATE button was pressed.

After viewing time and date, press **RETURN** on screen #88. Display returns to screen #79.

Pressing **MAIN MENU** returns display to screen #1.

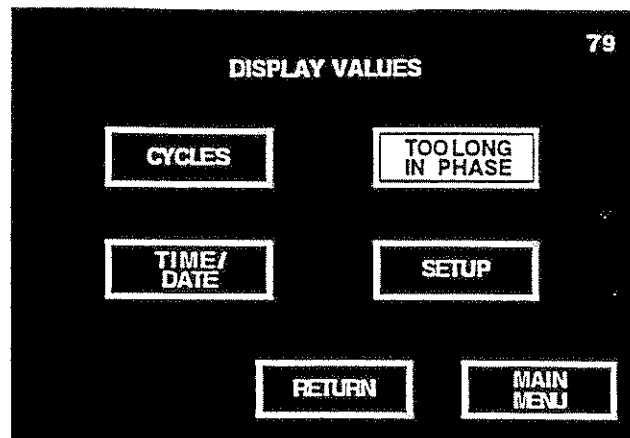


» **Too Long in Phase** To view the times currently programmed for the "too long in phase" values:

1. Press **TOO LONG IN PHASE** on screen #79.

Pressing RETURN returns display to screen #13.

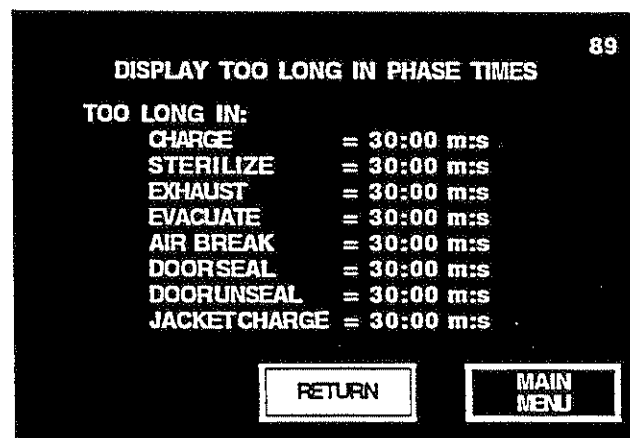
Pressing MAIN MENU returns display to screen #1.



2. Screen #89 lists the current "too long in phase" values programmed in the sterilizer control.

After viewing values, press **RETURN** on screen #89. Display returns to screen #79.

Pressing MAIN MENU returns display to screen #1.

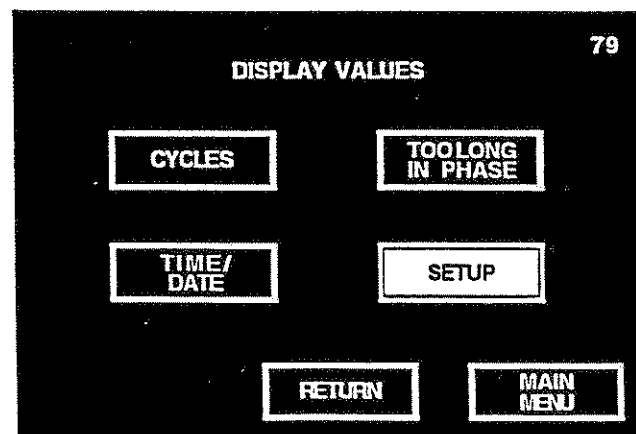


» **Setup** To view the current programmed setup values:

1. Press **SETUP** on screen #79.

Pressing RETURN returns display to screen #13.

Pressing MAIN MENU returns display to screen #1.



- Screen #90 lists the current pressure units, temperature units and audible signal settings programmed in the sterilizer control.

Press **NEXT** to view additional programmed setup values.

Pressing **RETURN** returns display to screen #79.

Pressing **MAIN MENU** returns display to screen #1.

90

DISPLAY SETUP VALUES

PRESSURE UNITS _____ PSIG/INHG

TEMPERATURE UNITS _____ CELSIUS

AUDIBLE SIGNALS:

ALARM _____ MEDIUM

END OF CYCLE _____ MEDIUM

TOUCHPAD _____ MEDIUM

RETURN

NEXT

MAIN MENU

- If the utility shutdown feature is selected (programmed to function automatically), screen #102 lists the restart and shutdown times programmed for each day of the week.

Press **NEXT** to view remaining programmed setup values.

Pressing **PREVIOUS** returns display to screen #90.

Pressing **MAIN MENU** returns display to screen #1.

102

UTILITY SHUTDOWN TIMES

DAY	RESTART	SHUTDOWN
SUNDAY	6:00:00 AM	7:00:00 PM
MONDAY	6:00:00 AM	7:00:00 PM
TUESDAY	6:00:00 AM	7:00:00 PM
WEDNESDAY	6:00:00 AM	7:00:00 PM
THURSDAY	6:00:00 AM	7:00:00 PM
FRIDAY	6:00:00 AM	7:00:00 PM
SATURDAY	6:00:00 AM	7:00:00 PM

PREVIOUS

NEXT

MAIN MENU

- Screen #103 lists the current settings programmed for utility shutdown, print format, duplicate print and printer status.

After viewing setup values, press **RETURN** on screen #103. Display returns to screen #79.

Pressing **PREVIOUS** returns display to screen #102 or #90.

Pressing **MAIN MENU** returns display to screen #1.

103

DISPLAY SETUP VALUES

UTILITY SHUTDOWN _____ AUTOMATIC

PRINT FORMAT _____ FULL

DUPLICATE PRINT _____ YES

TURN OFF PRINTER _____ NO

PREVIOUS

RETURN

MAIN MENU

Print Values

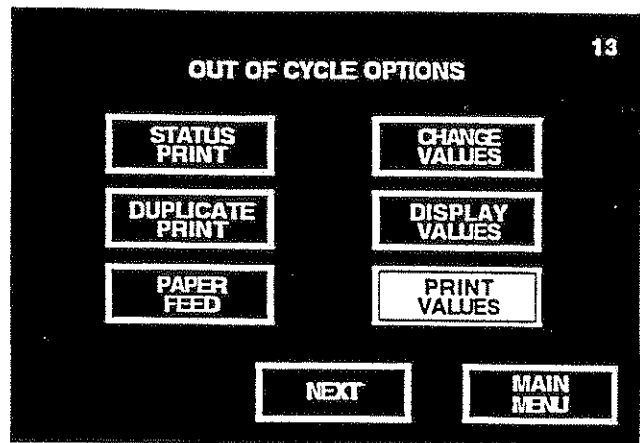
Print Values is used to generate a printed record of all the programmed values, all the values changed since the last printout, or the values of a particular cycle.

» All Values

1. Press **PRINT VALUES** on screen #13.

Pressing NEXT advances display to screen #87.

Pressing MAIN MENU returns display to screen #1.

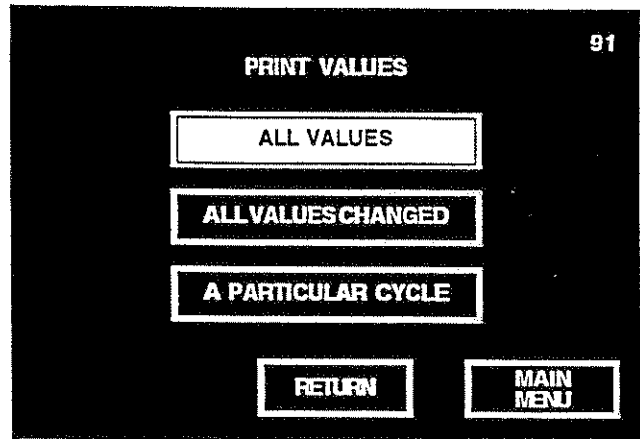


2. Press **ALL VALUES**. Control automatically generates a printout of all the programmed values (cycle values for all six processing cycles and all sterilizer operating parameters).

Display automatically returns to screen #13 once a print values selection is made.

Pressing RETURN returns display to screen #13.

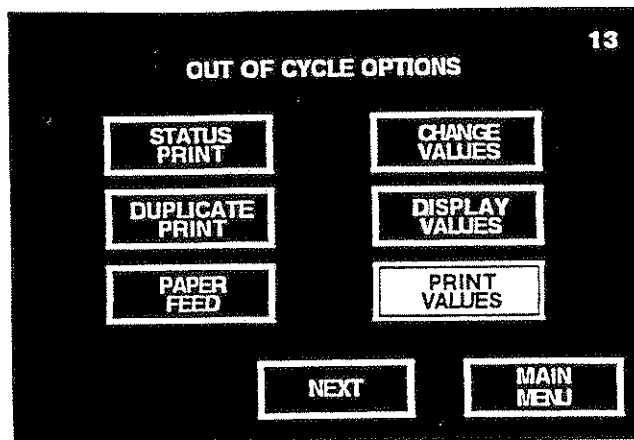
Pressing MAIN MENU returns display to screen #1.



» **All Values Changed** 1. Press **PRINT VALUES** on screen #13.

Pressing **NEXT** advances display to screen #87.

Pressing **MAIN MENU** returns display to screen #1.

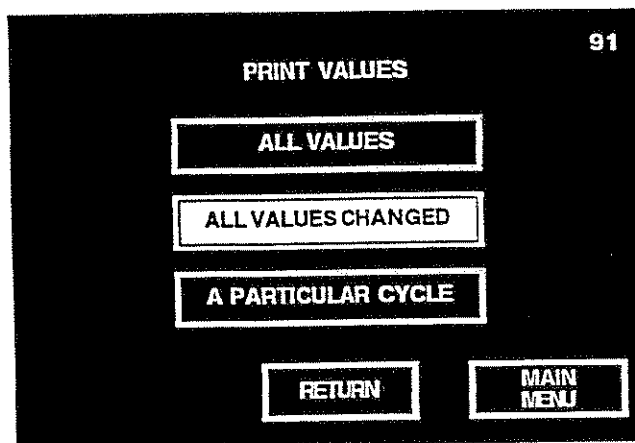


2. Press **ALL VALUES CHANGED**. Control automatically generates a printout of all the values changed since the last printout was generated.

Display automatically returns to screen #13 once a print values selection is made.

Pressing **RETURN** returns display to screen #13.

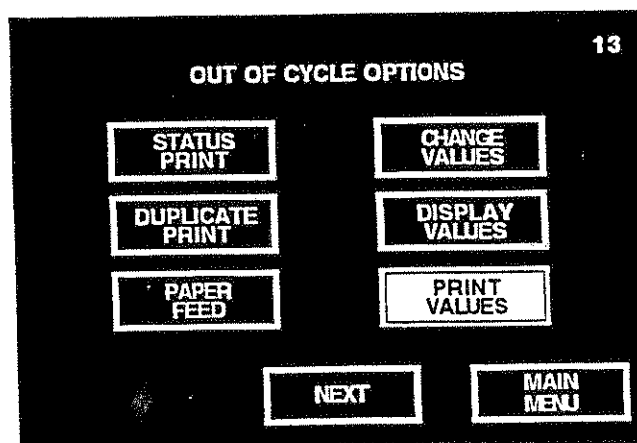
Pressing **MAIN MENU** returns display to screen #1.



» **A Particular Cycle** 1. Press **PRINT VALUES** on screen #13.

Pressing **NEXT** advances display to screen #87.

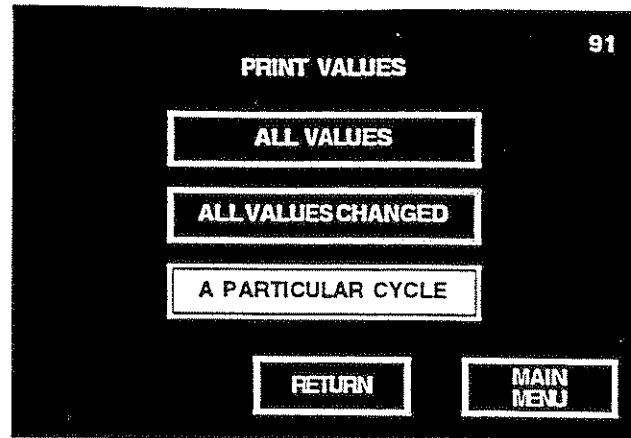
Pressing **MAIN MENU** returns display to screen #1.



2. Press **A PARTICULAR CYCLE**.

Pressing RETURN returns display to screen #13.

Pressing MAIN MENU returns display to screen #1.

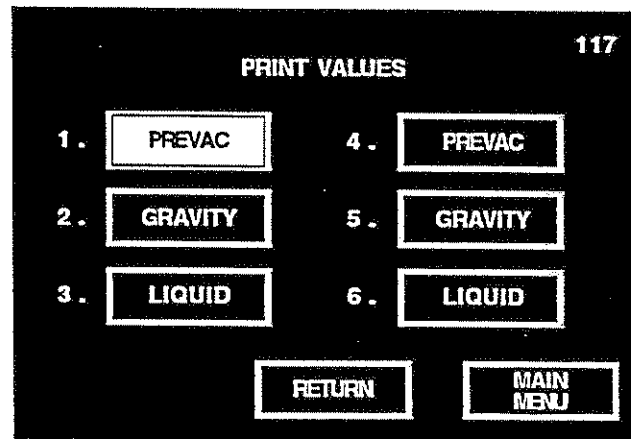


3. Press **cycle button** corresponding to the cycle and cycle values you wish to print out. Control automatically generates a printout of the cycle values programmed for the selected cycle.

Display automatically returns to screen #13 once a cycle button is selected.

Pressing RETURN returns display to screen #91.

Pressing MAIN MENU returns display to screen #1.



Standby

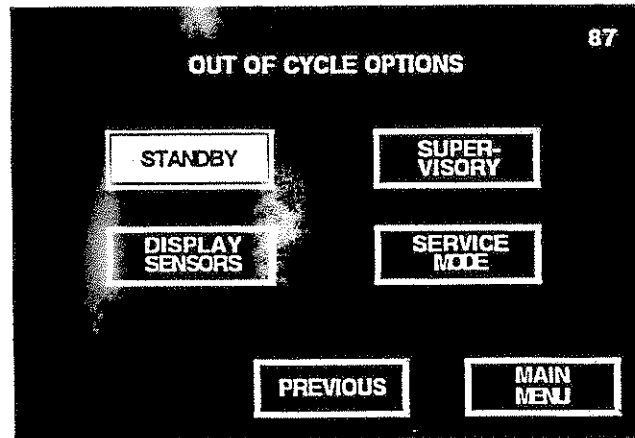
The Standby option allows sterilizer to be manually switched from the Operating mode to a Standby mode. When in Standby mode, all valves to the sterilizer are off, including jacket steam and water.

NOTE: Sterilizer should be manually placed in the Standby mode if automatic utility shutdown feature (Section 8) is not selected and the sterilizer will not be used for an extended period of time (e.g., overnight).

1. Press **STANDBY** on screen #87.

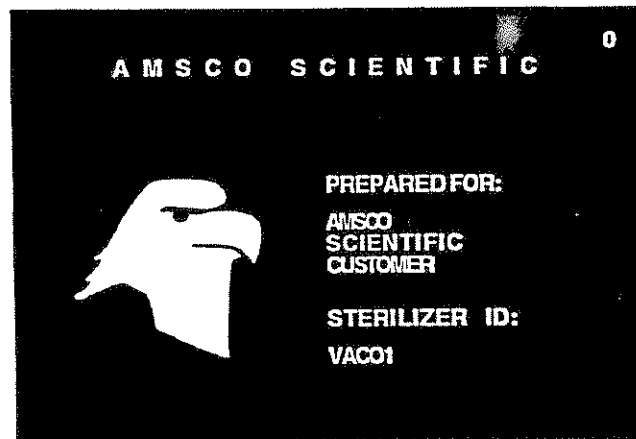
Pressing **PREVIOUS** returns display to screen #13.

Pressing **MAIN MENU** returns display to screen #1.



2. All valves to the sterilizer are automatically shut off and display returns to screen #0.

Pressing **EAGLE** advances display to screen #1, turns on all valves and places sterilizer in the Operating mode.



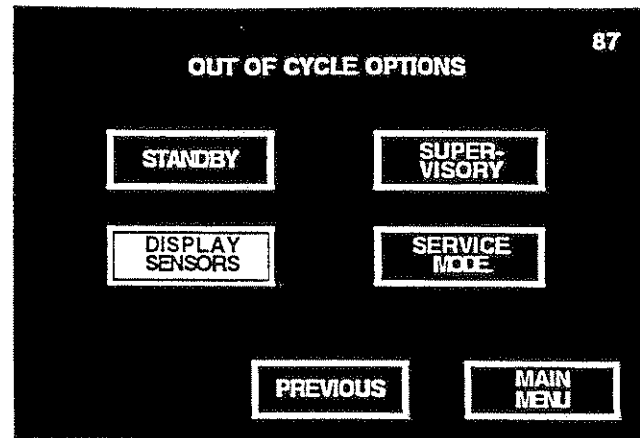
Display Sensors

Display Sensors is used to view the current temperature and pressure readings of the sterilizer.

1. Press **DISPLAY SENSORS** on screen #87.

Pressing **PREVIOUS** returns display to screen #13.

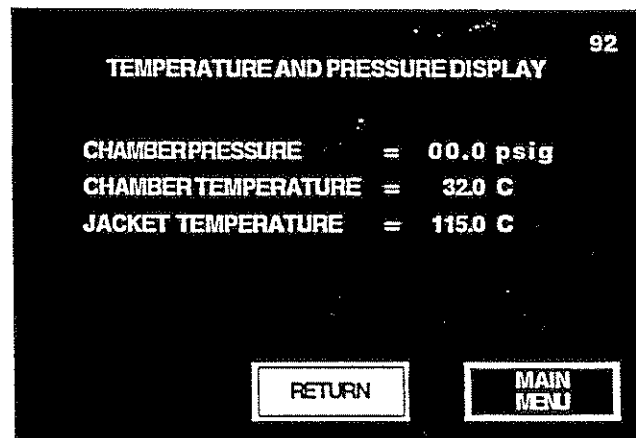
Pressing **MAIN MENU** returns display to screen #1.



2. Screen #92 lists the readings recorded by the sterilizer pressure and temperature sensors at the time the **DISPLAY SENSORS** button was pressed.

After viewing, press **RETURN**. Display returns to screen #87.

Pressing **MAIN MENU** returns display to screen #1.



Supervisory

Supervisory allows access to the Supervisory mode. From this mode, the authorized user may:

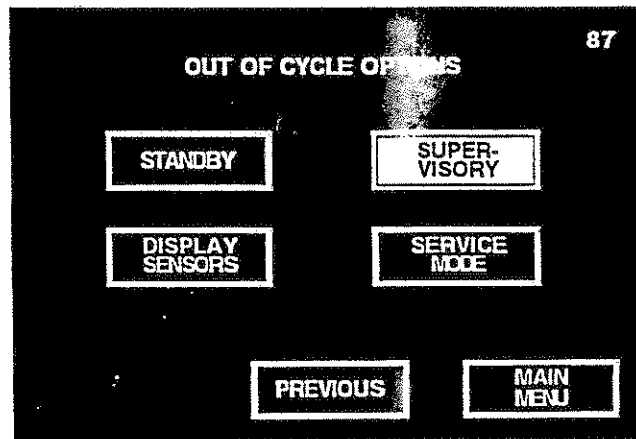
- » change the customer name and sterilizer ID number as it appears on the display and printouts
- » reset all cycle values and sterilizer operating parameters to the default values
- » view and change the programmed access codes
- » download cycle data through the optional RS-232 communications port
- » if sterilizer is equipped with double doors, override programmed interlock feature.

NOTE: Access to the Supervisory mode is limited by requiring entry of a four-digit code before advancing.

1. Press **SUPERVISORY** on screen #87.

Pressing **PREVIOUS** returns display to screen #13.

Pressing **MAIN MENU** returns display to screen #1.

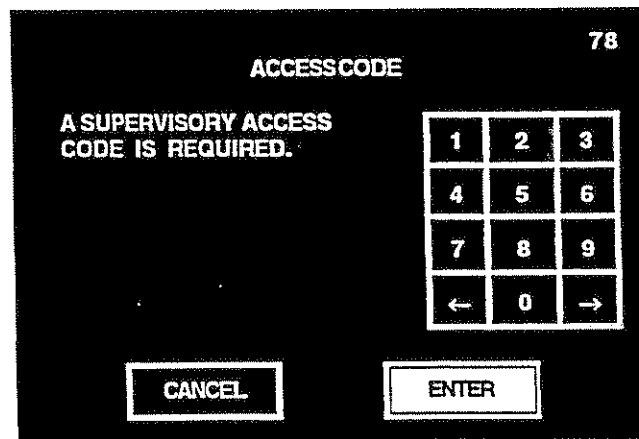


2. Enter four-digit supervisory access code using the numeric keypad. Default access code is 000. Once code is correctly entered, press **ENTER**. Printer records the date and time when Supervisory mode was accessed.

NOTE: If incorrect code is entered, pressing **ENTER** denies access to the Supervisory mode and returns display to screen #1.

Pressing ← or → on numeric keypad moves the entry location to the left or right, respectively.

Pressing **CANCEL** returns display to screen #1.



NOTE: Call AMSCO Engineering Service if Supervisory access code forgotten.

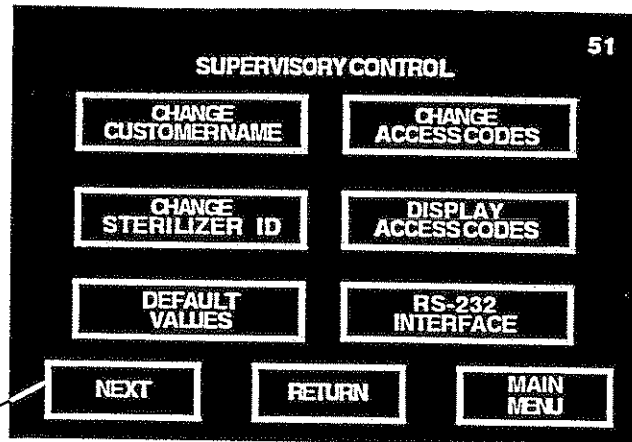
- Screen #51 lists the functions that can be performed in the Supervisory mode. To perform a specific function, refer to the following description titled the same as the button on screen #51.

Pressing **RETURN** returns display to screen #87.

Pressing **MAIN MENU** returns display screen #1.

If sterilizer is equipped with double doors, pressing **NEXT** advances display to screen #61.

Double Door
Units Only

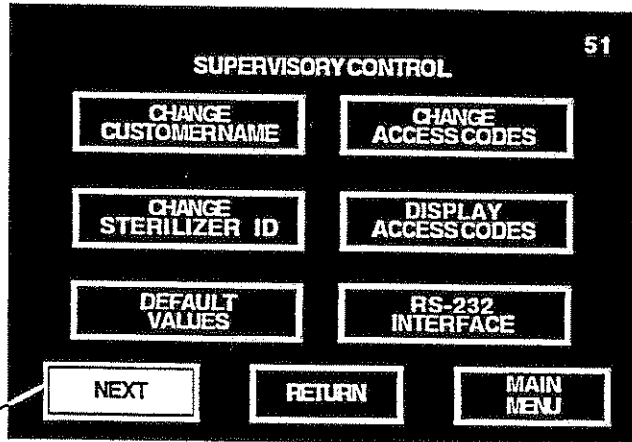


- If sterilizer is equipped with double doors, press **NEXT** on screen #51.

Pressing **RETURN** returns display to screen #87.

Pressing **MAIN MENU** returns display screen #1.

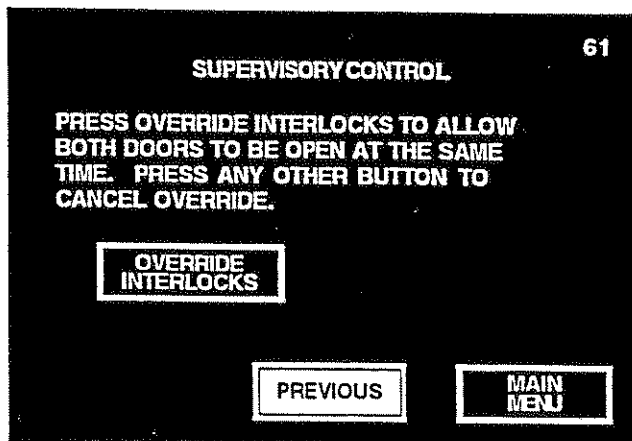
Double Door
Units Only



- Screen #61 allows supervisor to override the programmed interlock setting. To perform this function, refer to "Override Interlocks" later in this section.

Press **PREVIOUS** to return display to screen #51.

Pressing **MAIN MENU** returns display screen #1.



- To exit the Supervisory mode, press **RETURN** on screen #51. Display returns to the second Out of Cycle Options menu (screen #87).

» Change Customer Name

This function allows supervisor to change the customer name as it appears on screens #0 and #1.

1. Press **CHANGE CUSTOMER NAME** on screen #51.

Pressing **RETURN** returns display to screen #87.

Pressing **MAIN MENU** returns display screen #1.

Screen 51 displays the SUPERVISORY CONTROL menu. It features six rectangular buttons arranged in a 3x2 grid. The top row contains 'CHANGE CUSTOMERNAME' and 'CHANGE ACCESSCODES'. The middle row contains 'CHANGE STERILIZER ID' and 'DISPLAY ACCESSCODES'. The bottom row contains 'DEFAULT VALUES' and 'RS-232 INTERFACE'. At the bottom center are two buttons: 'RETURN' and 'MAIN MENU'. The screen number '51' is in the top right corner.

2. Enter customer name using the alphanumeric keypad. Customer name appears at bottom of display as it is being entered. Once name is correctly entered, press **RETURN**. Control saves the changed name and returns display to screen #51.

Pressing ← or → moves the cursor to the left or right, respectively.

Screen 66 displays the CUSTOMERNAME input screen. It features an alphanumeric keypad with letters A-Z, digits 0-9, and a SPACE key. Below the keypad is a label 'CUSTOMERNAME' followed by a series of dashed lines for text entry. To the left of the dashed lines are two arrow buttons (← and →). To the right is a 'RETURN' button. The screen number '66' is in the top right corner.

» Change Sterilizer ID

This function allows supervisor to change the sterilizer ID number as it appears on screen #0 and at the beginning of each in-cycle printout.

1. Press **CHANGE STERILIZER ID** on screen #51.

Pressing **RETURN** returns display to screen #87.

Pressing **MAIN MENU** returns display screen #1.

Screen 51 displays the SUPERVISORY CONTROL menu. The screen number '51' is in the top right corner. The menu options are arranged in a grid:

CHANGE CUSTOMERNAME	CHANGE ACCESS CODES
CHANGE STERILIZER ID	DISPLAY ACCESS CODES
DEFAULT VALUES	RS-232 INTERFACE
RETURN	MAIN MENU

2. Enter identification name using the alphanumeric keypad. Identification name appears at bottom of display as it is being entered. Once name is correctly entered, press **RETURN**. Control saves the changed name and returns display to screen #51.

Pressing **←** or **→** moves the cursor to the left or right, respectively.

Screen 17 displays the STERILIZER ID input screen. The screen number '17' is in the top right corner. The screen features an alphanumeric keypad and a cursor control section.

A	B	C	D	E	F	G	H
I	J	K	L	M	N	O	P
Q	R	S	T	U	V	W	X
Y	Z	SPACE				0	1
2	3	4	5	6	7	8	9

Below the keypad, there is a section for the STERILIZER ID:

STERILIZER ID
 ← → ----- RETURN

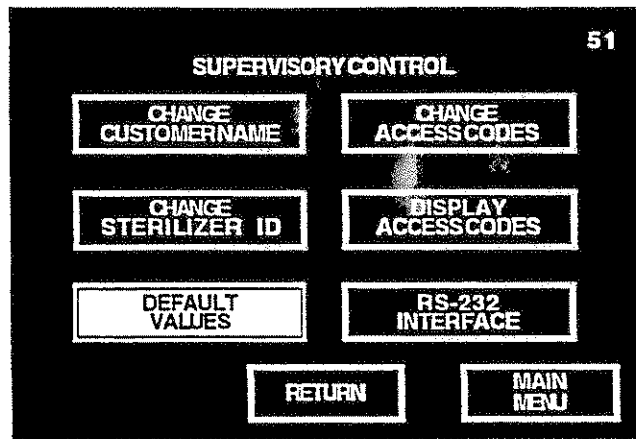
» Default Values

This function allows supervisor to reset all values to the factory-programmed values.

Press **DEFAULT VALUES** on screen #51 to automatically change all cycle values and sterilizer operating parameters back to the factory-programmed (default) values.

Pressing **RETURN** returns display to screen #87.

Pressing **MAIN MENU** returns display screen #1.



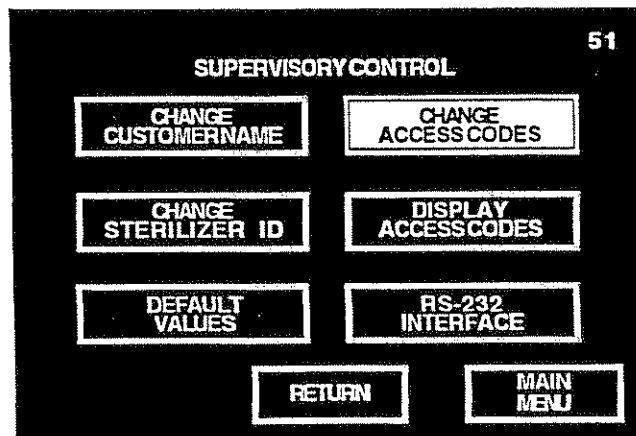
» Change Access Codes

This function allows supervisor to activate the access code feature and program the separate four-digit codes which will limit usage of the sterilizer, access to the Change Values menu and access to the Supervisory mode. Once the access code feature is activated, the assigned four-digit code must be correctly entered on the touch screen before the control will advance.

Change Values Access Codes

To activate and assign access codes which prevent unauthorized entry into the Change Values menu:

1. Press **CHANGE ACCESS CODES** on screen #51.



Pressing **RETURN** returns display to screen #87.

Pressing **MAIN MENU** returns display screen #1.

2. Press **CHANGE VALUES**.

Pressing RETURN returns display to screen #51.

Pressing MAIN MENU returns display screen #1.

48

ACCESS CODE SELECTION

CHANGEVALUES

STERILIZER

SUPERVISORY

RETURN

MAIN MENU

3. Press **YES** to activate the access code feature.

Pressing NO refuses the access code option and returns display to screen #48.

80

ACCESS CODE

DO YOU WISH TO HAVE AN
ACCESS CODE TO PREVENT
UNAUTHORIZED ENTRY INTO
CHANGEVALUES?

YES

NO

NOTE: Access code feature cannot be individually activated for each operator. Once the access code feature is activated, all designated operators must enter their assigned access code before advancing.

4. Access to the Change Values menu can be limited to six authorized operators. A separate access code can be programmed for each operator. To change an operator's name and access code, press the appropriate **operator button**.

Pressing RETURN returns display to screen #48.

Pressing MAIN MENU returns display to screen #1.

126

OPERATOR ACCESS

1.	MILLER	4.	DISABLED
2.	THOMPSON	5.	DISABLED
3.	DISABLED	6.	DISABLED

RETURN

MAIN MENU

5. Enter operator's name, maximum of 9 characters, using the alphanumeric keypad. Operator name appears on display as it is being entered. Once name is correctly entered, press **RETURN**.

NOTE: Operator name appears inside corresponding touch screen button on screen #126.

Pressing ← or → moves the cursor to the left or right, respectively.

77

CHANGE VALUES - OPERATOR NAME

A	B	C	D	E	F	G	H
I	J	K	L	M	N	O	P
Q	R	S	T	U	V	W	X
Y	Z	SPACE				0	1
2	3	4	5	6	7	8	9

←
→

OPERATOR NAME

RETURN

6. Enter the **old access code** (access code currently programmed for the selected operator) using the numeric keypad. Access code appears on display as it is being entered. Once the old code is correctly entered, press **ENTER**.

NOTE: Default access code is 0000.

Pressing ← or → on numeric keypad moves the entry location to the left or right, respectively.

Pressing CANCEL returns display to screen #48.

82

CHANGE VALUES ACCESS CODE

ENTER THE OLD ACCESS CODE.

1	2	3
4	5	6
7	8	9
←	0	→

CANCEL

ENTER

7. Enter the **new access code** using the numeric keypad. New access code appears on display as it is being entered. Once the new code is correctly entered, press **ENTER**.

Pressing ← or → on numeric keypad moves the entry location to the left or right, respectively.

Pressing CANCEL returns display to screen #48 without changing the current access code.

CHANGE VALUES ACCESS CODE 84

ENTER THE NEW ACCESS CODE

1	2	3
4	5	6
7	8	9
←	0	→

CANCEL ENTER

8. Screen #111 allows supervisor to designate which values can not be changed by the operator. To lock out a specific value, press the corresponding **values button**.

For example: Press SETUP to prevent the operator from changing the setup values. Once pressed, the values button reads LOCKOUT.

NOTE: Pressing CYCLES advances display to screen #112. Screen #112 allows supervisor to designate specific cycles which cannot be changed by the operator.

Once all desired values are locked out, press **RETURN**.

LOCKOUT VALUES 111

CYCLES	TOO LONG IN PHASE
TIME/DATE	SETUP

RETURN

9. Once access codes have been entered for all designated operators, press **RETURN** on screen #126. Control saves all changes made and display returns to screen #48.

The operator will now be required to enter the new access code before the control will advance to the Change Values menu (screen #14), allowing programming of only the designated cycle values and operating parameters.

Pressing **MAIN MENU** returns display to screen #1.

OPERATOR ACCESS	
1. MILLER	4. DISABLED
2. THOMPSON	5. DISABLED
3. DISABLED	6. DISABLED
RETURN MAIN MENU	

10. After all access codes have been entered, press **RETURN** on screen #48. Display returns to screen #51.

Sterilizer Operation Access Codes

To activate and assign access codes which prevent the sterilizer from being operated:

1. Press **CHANGE ACCESS CODES** on screen #51.

Pressing **RETURN** returns display to screen #87.

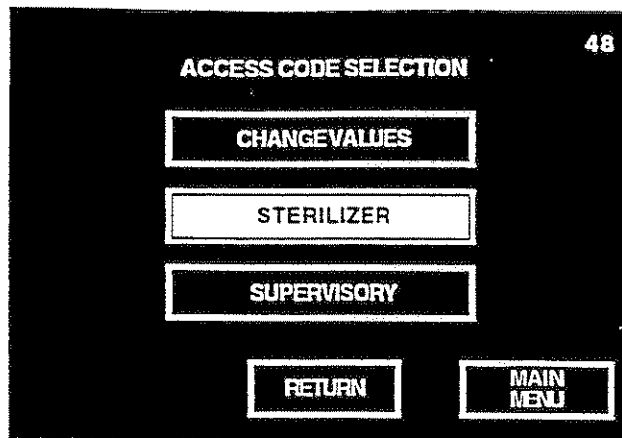
Pressing **MAIN MENU** returns display to screen #1.

SUPERVISORY CONTROL	
CHANGE CUSTOMER NAME	CHANGE ACCESS CODES
CHANGE STERILIZER ID	DISPLAY ACCESS CODES
DEFAULT VALUES	RS-232 INTERFACE
RETURN MAIN MENU	

2. Press **STERILIZER**.

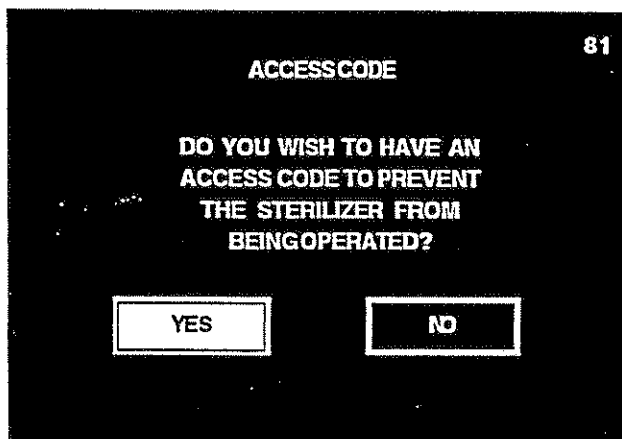
Pressing RETURN returns display to screen #51.

Pressing MAIN MENU returns display screen #1.



3. Press **YES** to activate the access code feature.

Pressing NO refuses the access code option and returns display to screen #48.

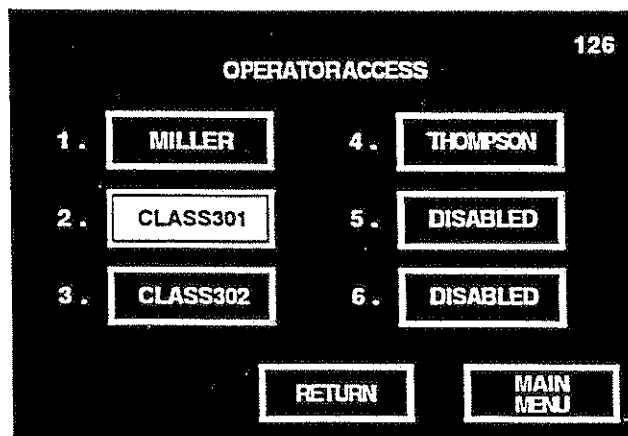


NOTE: Access code feature cannot be individually activated for each operator. Once the access code feature is activated, all designated operators must enter their assigned access code before advancing.

4. Sterilizer usage can be limited to six authorized operators. A separate access code can be programmed for each operator. To change an operator's name and access code, press the appropriate **operator button**.

Pressing RETURN returns display to screen #48.

Pressing MAIN MENU returns display to screen #1.



5. Enter operator's name, maximum of 9 characters, using the alphanumeric keypad. Operator name appears at bottom of display as it is being entered. Once name is correctly entered, press **RETURN**.

NOTE: Operator name appears inside the corresponding touch screen button on screen #126 and at the beginning of each in-cycle printout.

Pressing ← or → moves the cursor to the left or right, respectively.

77

STERILIZER - OPERATOR NAME

A	B	C	D	E	F	G	H
I	J	K	L	M	N	O	P
Q	R	S	T	U	V	W	X
Y	Z		SPACE			0	1
2	3	4	5	6	7	8	9

←

→

OPERATORNAME

RETURN

6. Enter the **old access code** (access code currently programmed for the selected operator) using the numeric keypad. Access code appears on display as it is being entered. Once the old code is correctly entered, press **ENTER**.

NOTE: Default access code is 0000.

Pressing ← or → on numeric keypad moves the entry location to the left or right, respectively.

Pressing **CANCEL** returns display to screen #48.

83

STERILIZER OPERATION ACCESS CODE

ENTER THE OLD ACCESS CODE.

1	2	3
4	5	6
7	8	9
←	0	→

CANCEL

ENTER

7. Enter the **new access code** using the numeric keypad. New access code appears on display as it is being entered. Once the new code is correctly entered, press **ENTER**.

Pressing ← or → on numeric keypad moves the entry location to the left or right, respectively.

Pressing CANCEL returns display to screen #48 without changing the current access code.

STERILIZER OPERATION ACCESS CODE 85

ENTER THE NEW ACCESS CODE.

1	2	3
4	5	6
7	8	9
←	0	→

CANCEL ENTER

8. Once access codes have been entered for all designated operators, press **RETURN** on screen #126. Control saves all changes made and display returns to screen #48.

The operator will now be required to enter the new access code before operating the sterilizer.

Pressing MAIN MENU returns display to screen #1.

OPERATOR ACCESS 126

1 .	MILLER	4 .	THOMPSON
2 .	CLASS301	5 .	DISABLED
3 .	CLASS302	6 .	DISABLED

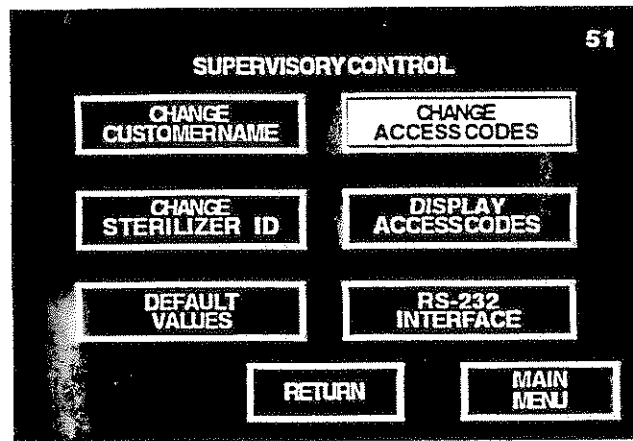
RETURN MAIN MENU

9. After all access codes have been entered, press RETURN on screen #48. Display returns to screen #51.

Supervisory Access Code

To change the access code which prevents unauthorized entry into the Supervisory mode:

1. Press **CHANGE ACCESS CODES** on screen #51.

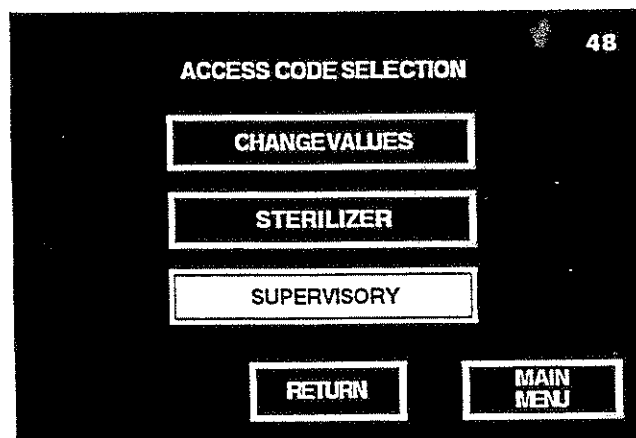


Pressing **RETURN** returns display to screen #87.

Pressing **MAIN MENU** returns display to screen #1.

2. Press **SUPERVISORY**.

NOTE: Access code is always activated for entry into the Supervisory mode.



Pressing **RETURN** returns display to screen #51.

Pressing **MAIN MENU** returns display to screen #1.

3. Enter the **old access code** (access code currently programmed) using the numeric keypad. Access code appears on display as it is being entered. Once the old code is correctly entered, press **ENTER**.

NOTE: Default access code is 0000. Call AMSCO Engineering Service if Supervisory access code is forgotten.

pressing ← or → on numeric keypad moves the entry location to the left or right, respectively.

Pressing CANCEL returns display to screen #48.

83

SUPERVISORY ACCESS CODE

ENTER THE OLD ACCESS CODE

1	2	3
4	5	6
7	8	9
←	0	→

CANCEL **ENTER**

4. Enter the **new access code** using the numeric keypad. New access code appears on display as it is being entered. Once the new code is correctly entered, press **ENTER**. Control saves the changes made and returns display to screen #48.

Pressing ← or → on numeric keypad moves the entry location to the left or right, respectively.

Pressing CANCEL returns display to screen #48 without changing the current access code.

85

SUPERVISORY ACCESS CODE

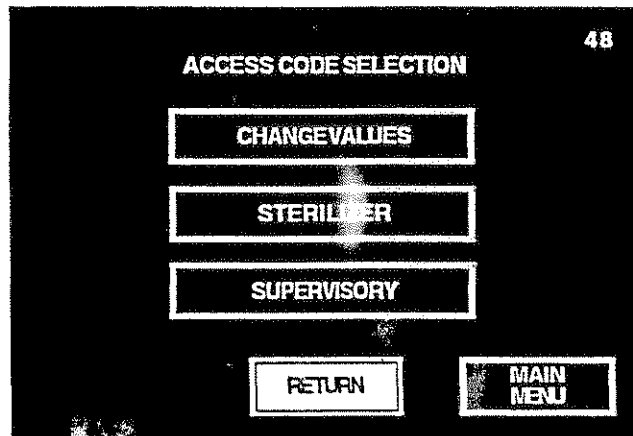
ENTER THE NEW ACCESS CODE

1	2	3
4	5	6
7	8	9
←	0	→

CANCEL **ENTER**

5. The supervisor must now enter the new access code in order to access the Supervisory mode.
6. Once all access codes (change values, sterilizer and supervisory) have been entered, press **RETURN** on screen #48. Display returns to screen #51.

Pressing **MAIN MENU** returns display to screen #1.



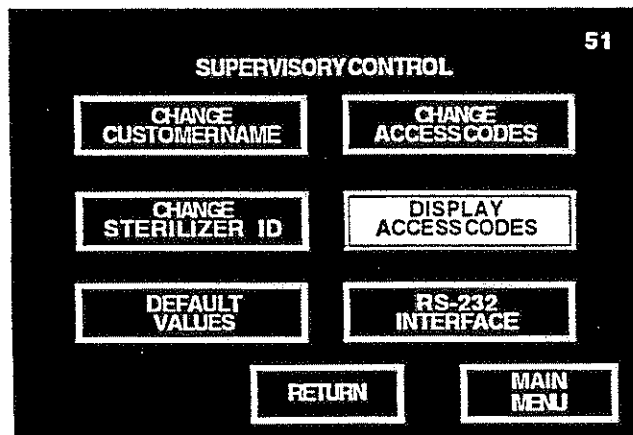
» Display Access Codes

This function allows supervisor to view the access codes currently programmed for each operator.

1. Press **DISPLAY ACCESS CODES** on screen #51.

Pressing **RETURN** returns display to screen #67.

Pressing **MAIN MENU** returns display to screen #1.



- Screen #46 lists the six operator names and corresponding access codes programmed to prevent use of the sterilizer. Current setting of the access code feature (enabled [turned on] or disabled [turned off]) appears under the screen title.

Press **CHANGE VALUES CODES** to view the other programmed access codes.

Pressing **PRINT CODES** automatically generates a printout of all programmed Sterilizer and Change Values access codes.

Pressing **RETURN** returns display to screen #51.

46

**STERILIZER ACCESS CODES
ACCESSENABLED**

OPERATOR	NAME	ACCESSCODE
1.	MILLER	1000
2.	CLASS301	3000
3.	CLASS302	5000
4.	THOMPSON	7000
5.	DISABLED	0000
6.	DISABLED	0000

CHANGE
VALUES
CODES

PRINT
CODES

RETURN

- Screen #46 now lists the six operator names and corresponding access codes programmed to prevent entry into the Change Values menu. Current setting of the access code feature (enabled [turned on] or disabled [turned off]) appears under the screen title.

After viewing access codes, press **RETURN**. Display returns to screen #51.

Pressing **PRINT CODES** automatically generates a printout of all programmed Sterilizer and Change Values access codes.

Pressing **STERIL. ACCESS CODES** changes the listing on screen #46 to show the programmed Sterilizer access codes.

46

**CHANGE VALUES ACCESS CODES
ACCESSENABLED**

OPERATOR	NAME	ACCESSCODE
1.	MILLER	1000
2.	THOMPSON	8000
3.	DISABLED	0000
4.	DISABLED	0000
5.	DISABLED	0000
6.	DISABLED	0000

STERIL.
ACCESS
CODES

PRINT
CODES

RETURN

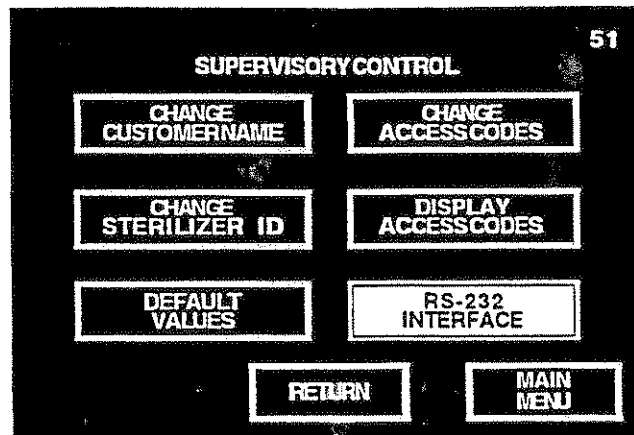
» RS-232 Interface

This function allows supervisor to download cycle data into the device (either a computer or printer) connected at the RS-232 interface port.

1. Press **RS-232 INTERFACE** on screen #51.

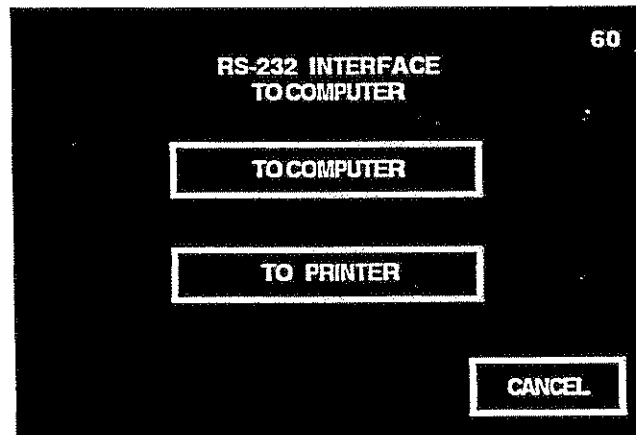
Pressing RETURN returns display to screen #87.

Pressing MAIN MENU returns display to screen #1.



2. Screen #60 allows supervisor to indicate the device which will receive the downloaded cycle data. Select the correct device by pressing the appropriate button. Current device setting appears under the screen title. Display automatically returns to screen #51 once a device is selected.

Pressing CANCEL returns display to screen #51.



- To setup computer interface, plug a null modem RS-232 cable from COM1 of the sterilizer control to COM1 or COM2 of a personal computer. The data may be retrieved from the computer by use of a standard communication software, or by use of the AMSCO RS-232 software program. The AMSCO RS-232 software program will retrieve the data and store it in a predefined file.
- To setup printer interface, plug a null modem RS-232 cable from COM1 of the sterilizer control to the printer.

» Override Interlocks

If sterilizer is equipped with double doors, this function allows supervisor to override the programmed interlock type.

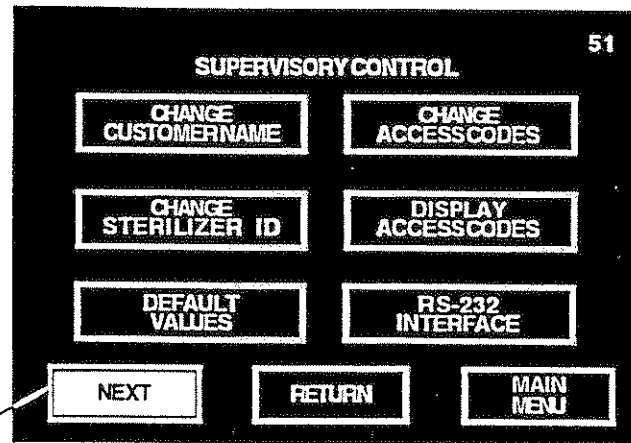
1. Press **NEXT** on screen #51.

NOTE: NEXT button appears on screen #51 only if sterilizer is equipped with double doors.

Pressing RETURN returns display to screen #87.

Pressing MAIN MENU returns display screen #1.

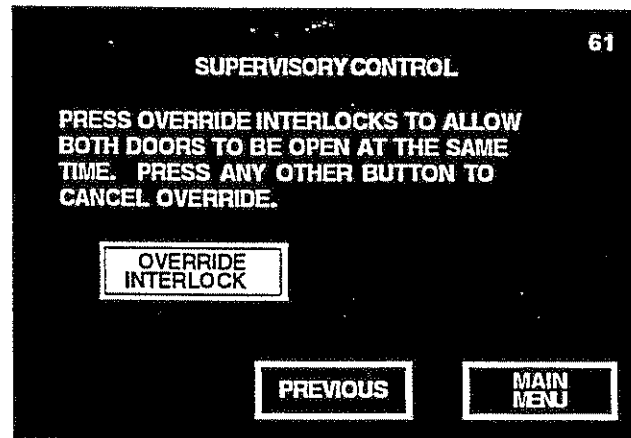
Double Door
Units Only



2. Press **VERRIDE INTERLOCKS** to unseal each door, allowing both load and unload end doors to be open at the same time.

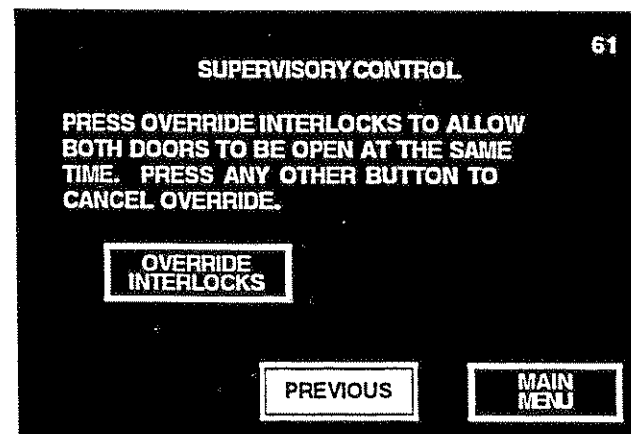
Pressing PREVIOUS returns display to screen #51.

Pressing MAIN MENU returns display screen #1.



3. To exit override option, press **PREVIOUS** on screen #61. Display returns to screen #51.

Pressing MAIN MENU returns display screen #1.



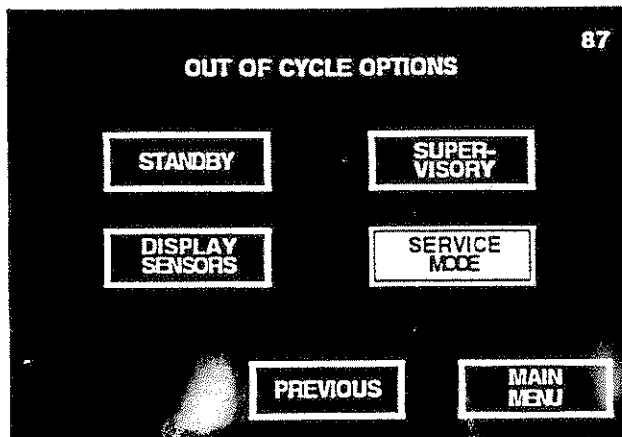
Service Mode

Service mode is used to calibrate the sterilizer sensors, test input/output of the sterilizer sensors, control alarm and maintenance functions and change all cycle values and operating parameters.

1. Press **SERVICE MODE** on screen #87.

Pressing **PREVIOUS** returns display to screen #13.

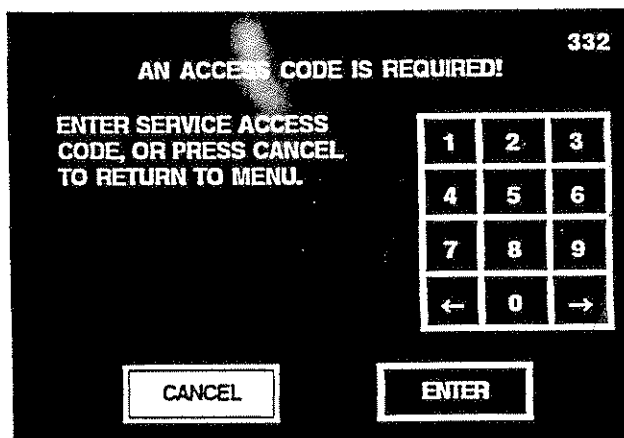
Pressing **MAIN MENU** returns display to screen #1.



2. Access to the Service mode is limited to authorized service technicians only. AMSCO recommends that a qualified service technician be contacted if Service mode must be accessed.

Press **CANCEL** to return display to the second Out of Cycle Options menu (screen #87).

Pressing **ENTER** advances display to first Service mode menu (screen #115) only if correct access code was entered.



Each screen is identified by a number, located in the top right hand corner of the display screen. Numbers are used throughout the manual for reference only, and do not relate to the operating sequence of the screens.

The following table lists the reference number of each screen, in numerical order, and the corresponding page number(s) where it pictorially appears within this manual.

Screen Reference Table

Screen Reference Number	Page Number(s)
0	4-1 / 5-0 / 6-1 / 9-14
1	4-2 / 5-3 / 5-10 / 5-16 / 5-22 / 5-25 / 5-27 / 6-2 / 7-2 / 8-1 / 9-1
2	4-2 / 4-3 / 5-3 / 5-10 / 5-16 / 5-23 / 5-25 / 5-27
3	4-4 / 5-4 / 5-23 / 5-25 / 5-28
4	4-3 / 5-4
5	5-16 / 5-17
6	5-10 / 5-11
7 - Prevac Cycle	5-9
7- Gravity Cycle	5-15
7 - Liquid Cycle	5-21
8	7-13
9 - Prevac Cycle	3-2 / 5-4 / 5-5 / 5-6 / 5-7 / 5-8 / 5-9 / 5-29
9 - Gravity Cycle	5-11 / 5-12 / 5-13 / 5-14 / 5-15
9 - Liquid Cycle	5-17 / 5-18 / 5-19
10	5-30
11	5-30
12	8-22
13	4-5 / 6-3 / 6-4 / 7-2 / 7-16 / 8-1 / 9-1 / 9-2 / 9-3 / 9-4 / 9-11 / 9-12
14	7-3 / 7-16 / 8-2 / 8-4 / 8-8
15	7-3 / 7-4 / 7-15
16	7-4
17	9-19
20	7-5
21	7-8
22	7-11 / 7-13
28	7-6

Screen Reference Table (continued)

Screen Reference Number	Page Number(s)
29	7-6
30	7-7
31	7-7
32	7-8
33	7-9
34	7-9
35	7-10
36	7-10
37	7-12
38	7-12
39	8-3
40	8-4
41	8-5
42	8-5
43	8-6
44	8-6
45	8-13
46	9-31
47	8-21
48	9-21 / 9-25 / 9-28 / 9-30
49	8-12 / 8-13
50	8-9 / 8-12 / 8-14 / 8-20 / 8-22 / 8-23
51	9-17 / 9-18 / 9-19 / 9-20 / 9-24 / 9-28 / 9-30 / 9-32 / 9-33
52	8-5
53	8-6 / 8-8
54	8-7
55	8-7
56	8-9 / 8-10 / 8-11
57	8-10
58	8-11
59	8-7
60	9-32
61	9-17 / 9-33

Screen Reference Table (continued)

Screen Reference Number	Page Number(s)
66	9-18
74	5-20
75	5-20
77	7-5 / 9-22 / 9-26
78	6-2 / 6-3 / 9-16
79	9-5 / 9-8 / 9-9
80	9-21
81	9-25
82	9-22
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84	9-23
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